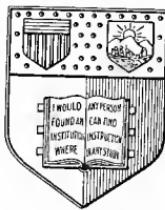


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ENGLISH HOPS



THE HOP MARKET IN THE BOROUGH.

(From an Engraving of 1729.)

ENGLISH HOPS

A HISTORY OF CULTIVATION
AND PREPARATION FOR
THE MARKET FROM
THE EARLIEST
TIMES

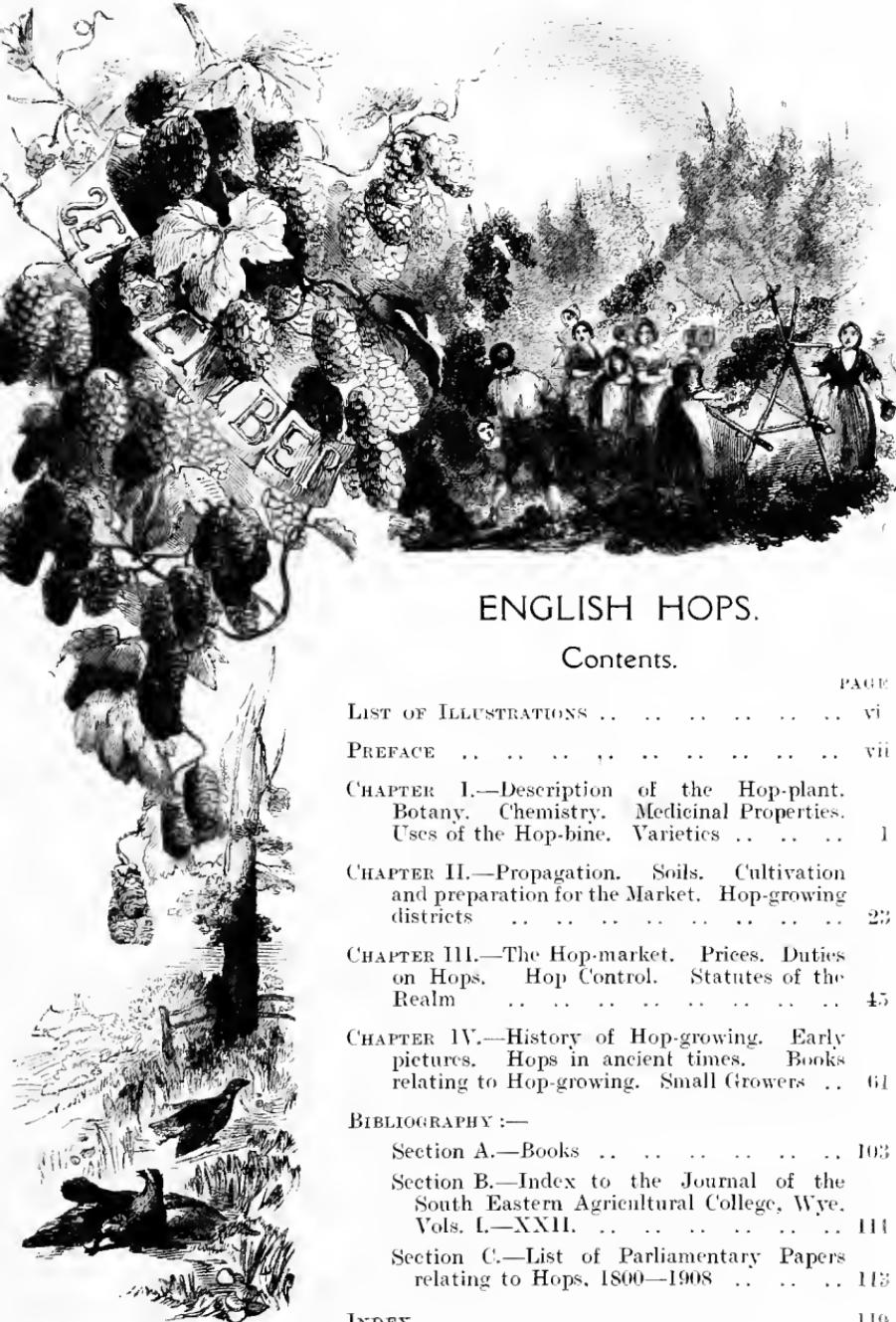
By GEORGE CLINCH
F.S.A. SCOT., F.G.S.

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ENGLISH HOPS.

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PREFACE.

No survey of the natural wealth and industries of England can be regarded as complete which does not include an account of the cultivation and drying of hops. The subject has long been one in which the writer has taken a keen interest, and during the past few years he has had the great advantage arising from collaboration with Messrs. W. H. and H. Le May, the widely-known firm of Hop Factors in the Borough. These gentlemen were able from their life-long experience and stores of knowledge to bring the information up-to-date, to correct the author on many practical points, and to infuse into the book a vital interest which cannot fail to add much to its value.

During the writing of the book, Mr. Edward Le May, a member of the firm, has passed away, and the writer desires to put on record his deep sense of obligation for the friendly and valuable help he received from him. He desires, also, to express his thanks for much assistance rendered by the Right Honble. Lord Northbourne; Dr. F. W. Cock, F.S.A., of Appledore; Mr. E. S. Salmon, of the South Eastern Agricultural College, Wye; Dr. B. Daydon Jackson; and Mr. Arthur L. Humphreys, for many bibliographical details.

GEORGE CLINCH.

SUTTON, SURREY,
August, 1919.

ENGLISH HOPS.

CHAPTER I.

DESCRIPTION OF THE HOP-PLANT. BOTANY.

CHEMISTRY. MEDICINAL PROPERTIES. USES OF THE HOP-BINE. VARIETIES.

There are two distinct species of the hop-plant. One, called the Japanese Hop (*Humulus japonicus*), is a native of Japan, China, and the adjacent islands, and, although grown in this country as an ornamental climbing plant in gardens, it is useless in brewing.

The other species, the ordinary hop (*Humulus Lupulus*, L.), is a native of large areas in Europe and Western Asia. It grows freely in the southern and south-western parts of the British Islands.

All the kinds of market hops belong to this species, known to botanists, as has been remarked, as *Humulus Lupulus*. This is a pre-Linnean term in which two substantives occur, hence *Lupulus*, being not an adjectival term, should be written with a capital letter.

Humulus is a Latin term meaning fresh earth, and is applied to the hop in allusion to the plant's habit, when unsupported by poles, &c., of creeping along the ground.



FIG. 1.—*The female Hop. Specimen of Fuggle's Hop, with the front petals removed in order to show structure.*

There are male and female hop-plants; the male hop, when planted in the hop-garden in the



FIG. 2.—*The male Hop (Fuggle's).*

proportion of about 1 per cent., tends to increase the size of the cone of the female plant and the weight of the crop.

The female flower, technically known as the strobile, is really the hop of commerce, and its functional parts are best seen in an early stage of growth when the hop is "in burr." The ovary, which contains a single ovule, is surmounted by two long stigmas covered with long hairs, or papillae.

If the hop is pollinated the brush, having performed its functions, withers and drops off, and the hop begins to develop. Those hops which have not received pollen grow out more slowly, and do not generally attain so large a size.

The well-grown hop consists of (1) stipular bracts (or "petals") which bear few lupulin-glands and no seed, and (2) bracteoles which occur in pairs and bear seeds and lupulin.

The chief value of the hop is contained in the small round particles of amber-yellow coloured dust, called lupulin. Hop growers and brewers call this yellow substance the "condition." The lupulin glands are hollow, and contain a mixture of oil and resinous material which imparts to beer the keeping quality and the peculiar and highly-prized aroma and flavour which characterise it as a beverage.

The lupulin glands first appear as small cup-shaped objects, and in due course, when the hops are nearly ripe for picking, they become filled with an oily resinous matter, which becomes opaque when the hops are ready for drying.

Lupulin has been found by chemists to contain (1) an essential oil, (2) resin, (3) wax, (4) bitters, and (5) perhaps one or more alkaloids. All or most of these are soluble in water and alcohol.

The hop possesses medicinal values quite apart from its use in flavouring and preserving beer.

Nicholas Culpeper, in his *English Physitian enlarged*, of 1695, mentions the hop as a well-known plant. "They delight to grow in low moist grounds," he writes, "and are found in all parts of this land. They spring not up until *April*, and flower not until the latter end of *June*; the heads are not gathered until the middle or latter end of *September*."

Culpeper regards the hop as under the dominion of Mars, and attributes to it blood-cleansing properties of great value in a vast number of disorders. He points out that medicinally the tops, or young shoots, of the hop are valuable as well as the flowers, and that the wild hop possesses virtues which are as important as those of the cultivated kinds, an opinion which was shared by Reynolde Scot.

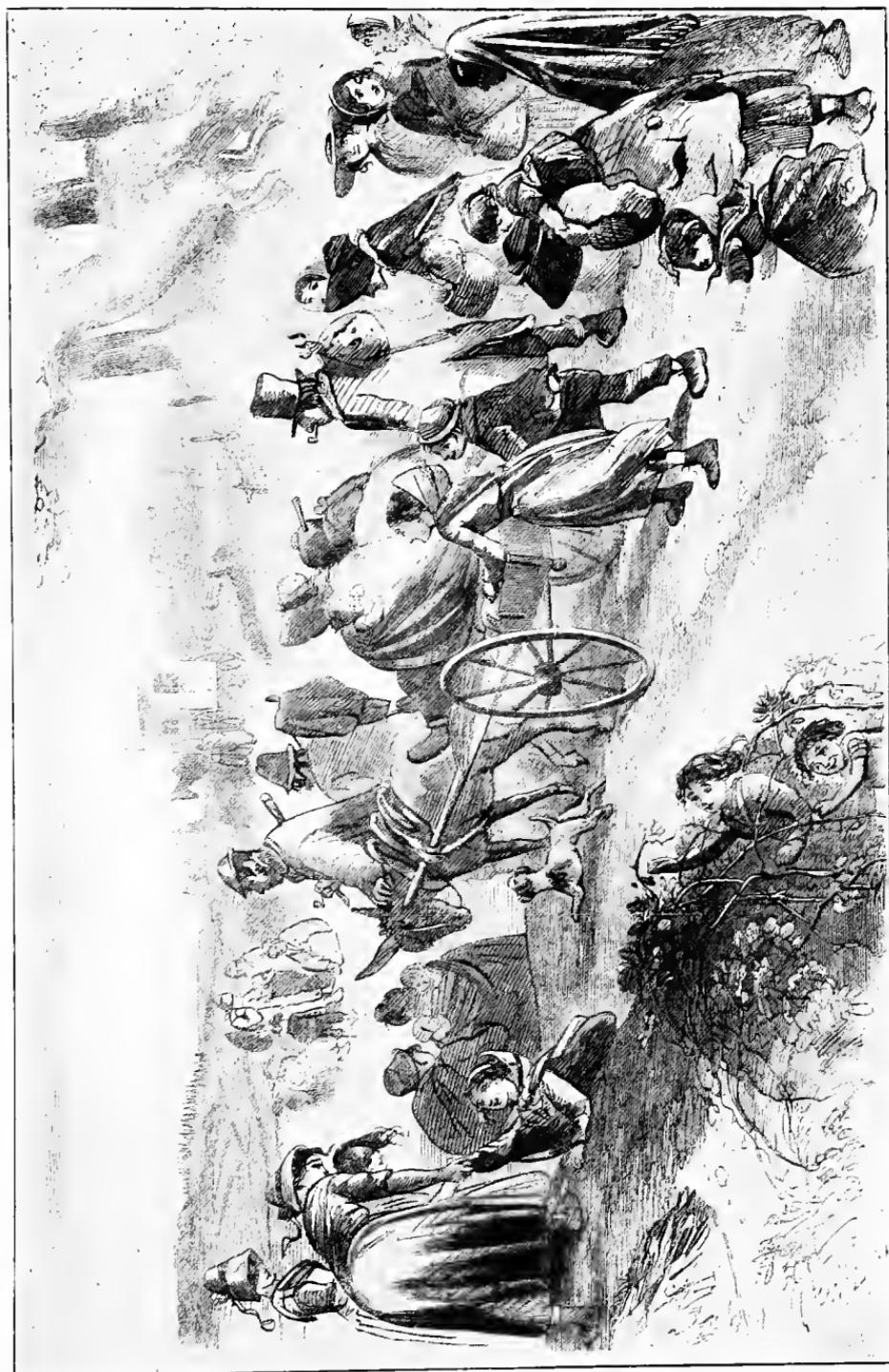


FIG. 3.—*Hop-pickers on the road.* (Drawn by "Phiz.")

Culpeper's account, interesting as showing the fancies and superstitions of his time, may be disregarded, or much discounted, nowadays when the belief in planetary influence is no longer held.

Hops are now used in the form of hop-pillows, and as tincture or infusion taken internally for their soporific and tonic effects. The most important of the medicinal virtues, however, reside in the lupulin.

As a medicine, certain decoctions and syrups of hop-flowers or cones are used in pestilential fevers, scurvy, &c.

Young shoots, when about three inches above the ground, are sometimes boiled and eaten as asparagus.

The hop-bine, after the hops are gathered, has sometimes been put into silos for fodder and also used for litter for cattle, and it is frequently used as a foundation for ricks of hay or corn.

A rough cloth made from the fibre of the hop-bine, used for making pickers' bins, hop-pokes, etc., was made about 1830-40 by Mr. John Ledbitter, at Farnham.

VARIETIES OF HOPS.

Roughly, the varieties may be arranged in three groups, known according to the period of their maturity, as early, main crop, and late.

EARLY HOPS.

Hobbs's Early.—These hops have green bines, and are not of large size. They ripen rather earlier than Prolifics, and are of slightly better quality. This variety is very little grown now.

Flemish Red-Bine.—An early large hop, deficient in lupulin ; no longer grown.

Prolific.—This is a large hop, but rather deficient in quality and flavour. The hop itself is of an orange tint when ripe ; it contains a large quantity of purple-coloured seed, and the bine is red and short. It was reared in 1852 from a plant selected from a garden of Old Jones's hops by Mr. Thomas Guest, of Chill Mill Farm, Brenchley, Kent. Very few are grown now.

Tolhurst Hops.—This hop was raised by Mr. James Tolhurst, of Horsmonden, in the early eighties. It is the most prolific and heaviest cropper of any hop known grown on clay soil. During the last few years the flavour has been greatly improved by cultivation. It is a good copper-hop.

Meopham.—Large, coarse, medium-flavoured hops, containing only a small proportion of lupulin. The plant has a red-coloured bine. It probably originated from the Flemish hop.



FIG. 4.—*Hop-pickers resting.* (Drawn by "Phiz.")

Henham's Jones's Hop attains a rather pretty golden colour when ripe, and is of good size. Lupulin is scarce, but the flavour is fair. The bine is thin and pale in colour. This variety was raised by Mr. Iden Henham, of East Peckham, Kent.

White's Early.—This may be regarded as one of the best of the early hops. It has good flavour and is of pale golden colour, the petals being loose and open at the tip. The yield is uneven and seldom satisfactory to the grower. This variety was introduced by Mr. George White, of Hunton, near Maidstone, in 1852.

Bramling.—This variety is widely grown in all the best hop-growing districts. The hop is of good size, firm and compact, and partakes of the character of the best Golding hops. The name was given from the fact that the plant was selected by a farm-bailiff named Smith, on Mr. Musgrave Hilton's farm at Bramling, a hamlet in the parish of Ickham, near Canterbury. The Bramling hop came into popular and extensive favour about the year 1865.

Amos's Early Bird.—This is an excellent variety of early hop, thrives in good districts, and closely resembles the Bramling. It was raised by Mr. Alfred Amos, of Wye, Kent.

Bennett's Early Seedling.—Although of only medium size, this kind is well furnished with

lupulin, possesses a moderately good flavour, and favours stiff soils. This variety is believed to have been grown from seed by Mr. Bennett, of Wrotham, Kent.

Seale's Early Golding was raised by Mr. Seale of Horsmonden. Very few are now grown.

MAIN CROP HOPS.

Rodmersham, or Mercer's Hop.—This is a distinctly valuable hop, being prolific and well furnished with lupulin. It was selected by Mr. R. M. Mercer, of Rodmersham House, Sittingbourne, about the year 1880, from a garden said to be over 100 years old at Malling, Kent.

Cobb's Hop is of good flavour and of a Golding character. It was introduced about the year 1881 by Mr. John Cobb, of Sheldwich, near Faversham.

Whitebines.—This is a variety of the Golding, of a most delicate flavour, grown principally at Farnham, and in Hampshire, and also at Canterbury.

Greenbines are practically limited to Farnham and Hampshire. Both varieties are highly prized by the brewers.

Cooper's White.—Its colour and lupulin contents are good. It is grown mainly in Worcestershire and Herefordshire.



FIG. 5.—*Sunday morning with the hop-pickers, 1875.* (Drawn by M. Fitzgerald.)

Mathon.—This hop is principally grown in the counties of Worcester and Hereford, and is certainly suited to their soils. It closely resembles the Bramling hop, is full of lupulin and of good aroma, and is much appreciated by the brewers.

Fuggle's Hop.—This hop flourishes on stiff land, is of strong flavour, and much prized by the brewer. The original plant of this variety was discovered in a flower garden at Horsmonden, and sets were introduced to the public by Mr. Richard Fuggle, of Brenchley, about the year 1875.

Bates's Brewers.—This variety was selected by Mr. John Bates, of Brenchley, about the year 1879 or 1880 from a garden in the Sevenoaks Weald district. The six sets yielded by the original plant were bought for a bottle of whisky apiece. The hop is of excellent quality, full of lupulin and of good flavour, and as its name implies, a really good brewers' hop; but it does not produce a heavy crop, and consequently is not much in favour with our growers.

Old Jones's Hop is well-shaped, of good colour, of medium size, and of good flavour. The bine is short and green. It was cultivated under the name of Jones's Hop as early as 1798, but is now little grown, as it bears only a small crop.

Golding.—This is the choicest, richest, and most valuable variety of hops grown, and the name has been erroneously applied to some of the inferior sorts. In reality, however, there is only one variety to which the name Golding belongs. This was raised about the year 1790 by Mr. Golding, of Malling, and in the course of a few years it was widely grown in all the best districts. Goldings are characterised by the large size and perfect shape of the hop.

Tutsham Hop.—This variety was produced at Tutsham Farm, West Farleigh, is of the Golding character, and of good shape and flavour. It was raised by Mr. Gerald Warde, Tutsham Hall.

The Grape Hop.—The hop itself is squarish in section, and grows in very short branches, giving the crowded appearance of a bunch of grapes, to which circumstance the name is due. Colour and flavour are both good. It will grow on most soils, but very few are grown now.

The Mayfield Grape is an improved Grape hop. These are also very rarely grown, the Fuggles having taken their place.

LATE HOPS.

Canterbury Jacks, Buss's Goldings, or Wild Hops. This is a small hop of the shape of the Golding, but with thin and pale-coloured “petals.” The flavour is good, but the supply of lupulin is small.

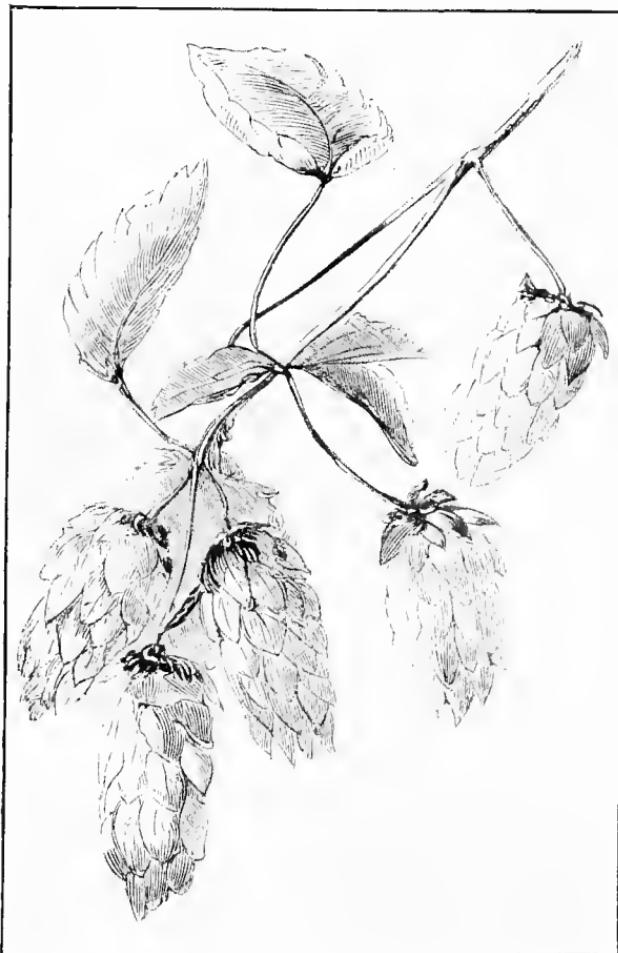


FIG. 6.—*A bunch of well-grown hops from Mr. Ellis's garden, East Farleigh, Kent.*

The plants have red bines and are very hardy. The variety was originally obtained about the year 1869 from Lyminge, in Kent, and grown with success by Mr. B. Buss, of Elphicks, Horsmonden. There is little or no difference between these and those known as Canterbury Jacks, Wild Hops and Late Red Bines.

Colegate's Hop.—These hops are long and narrow in form, and very late in ripening. The branches are slender and the leaves deeply serrated. This variety is grown on the clay soils of Kent and Sussex. They were introduced about the year 1805 by Mr. David Colegate, of Chevening, in Kent. They have gone almost out of cultivation.

Other varieties mentioned by old writers are Golden Tips, Pretty Will's, Williams's, Ruflers, Apple Puddings, and Waring's Imperial. These varieties are almost extinct. The two last were once grown in the Weald.

Generally speaking, it would seem that the varieties have probably been developed by selection and cultivation, and experience having discovered their excellences or defects, their peculiar suitability or otherwise for particular soils, or aspects, or neighbourhoods, the grower has naturally selected the variety known to be best adapted for his own farm.

One of the results of the excellent experimental work and researches accomplished by the South Eastern Agricultural College, at Wye, Kent, has been the production and determination of several new varieties of hops. Experience will show how far these new varieties may excel, and to what extent they are likely to supersede, the old and well-tried kinds.

CHAPTER II.

PROPAGATION. SOILS. CULTIVATION AND PREPARATION FOR THE MARKET. HOP-GROWING DISTRICTS.

There are two methods of propagating the hop, namely, from seeds and from cuttings. Practical men prefer the latter method because it is more easy to preserve the true strain in that way than it would be from seedlings. It has been noticed by hop-growers that when hops are propagated from seed twenty-five per cent. of the plants are of the male sex. Occasionally, but very rarely, male and female hops are produced by the same plant, and instances are on record of male plants being produced from cuttings taken from the female hop-plant.

SOILS.

The selection of suitable soils is one of the most important matters to be considered in establishing a hop garden, and from the days of Reynolde Scot downwards all writers on the subject have paid great attention to it.

While experience has proved that land with a rocky sub-soil, such as is found in the valley of the Medway, is particularly suitable for hops, the plant is found to flourish on the clays in the Wealden districts of Kent and Sussex, and the deep loams and brick-earths of East Kent,

especially in the districts extending from Rainham to Faversham and Canterbury and thence to Sandwich.

Another important principle of successful hop-growing is the obtaining of a dry mulch, by the frequent loosening of the surface of the soil by cultivation. This is done either by digging by hand, or by means of a horse nidget, preferably the former. Of course, one object of this loosening of the soil is to kill weeds, but an equally desirable aim is to produce a friable, powdery condition of the soil which affords the handiest and most effective means of checking evaporation of moisture from the ground round the roots of the hop-plant. A certain amount of moisture is necessary to the healthy growth of the hop-plant, and this dry mulch furnishes the best means of preserving it.

POLING AND STRINGING.

This work is done during the winter, before the new growth starts. In the old system, from two to four poles were employed for each hill, according to the various kinds of hops; and sometimes two poles and three poles were placed alternately in the rows of hills. Chestnut and ash-poles were generally used.

A great saving in the life of the poles was effected some years ago by steeping the lower ends in creosote, which was then heated to the boiling point.

In recent times a new system of permanent wire-work has superseded the old-fashioned poling. The wires are supported by stout poles, and the string, made of cocoanut fibre, is fastened to a stake in the hill and carried to the wires overhead, which are placed from 12 to 14 feet above the ground.

There are several systems of stringing, those in more general use being known as the Butcher principle*, the Worcester principle, and the umbrella principle. The purpose of these different systems is so to distribute the bine as to expose it to the maximum of sun and air.

In or about the year 1874, Mr. Thomas Coley introduced what was called the patent viney system of poling, in which diagonal short poles were fixed from about the middle of one pole to the upper end of its neighbour. The cost was rather heavy, amounting to £70 or upwards an acre.

The chief advantages of this system were (1), that the poles were made more stable in that way, and more able to resist wind pressure, and (2) that the hops were, in consequence, less damaged by battering against the poles; moreover, hanging as they did from the diagonal poles, they had a certain play, free from the perpendicular poles, which tended to save them from injury.

Another old method, which has also been abandoned, was that introduced by Mr. Farmer, of

* Introduced by Mr. Butcher, of Selling, Kent.

Kyrewood, Tenby, in which the hops were trained on horizontal wires fixed on perpendicular poles. The defect of this method was that the hop-bine required constant tying because it is not according to the nature of the hop-plant to grow out laterally.

DRESSING.

When the digging in the hop garden is first done, generally in March, the earth is thrown out from the hills so as to expose the roots of the hop plants. With a pruning knife, the old bine, within an inch or two of the crown, is cut away. The parts which are cut away, having several buds upon them, are used to form sets for new plants.

PULLING.

This is one of the earliest operations to be carried out in hop cultivation. The first bine which appears is frequently of a very rank nature, the joints of which are wide apart and unfruitful. These are pulled out by careful and observant growers, and the succeeding bines are tied up to the poles. These bines are usually found to be much more closely jointed and more prolific in bearing hops.

TYING.

As soon as the suitable bine has a sufficient growth, the tying operations are commenced. Rushes are commonly used for this purpose, and

the work is done by women. The process has to be repeated two or three times during the season as the bine climbs up the pole or string.

MANURING.

A great variety of manures have been used at different times for the improvement of the hop crop. The best and most reliable are doubtless farmyard manure, bone-meal, feathers and fur-waste, Peruvian guano, and fish guano. Fish manures, such as sprats and mussels, are powerful and immediate stimulants of growth. Artificial or chemical manures include nitrate of soda and sulphate of ammonia.

WASHING.

All practical and scientific hop growers rely much upon washing to free the hop-bine from insect pests. A mixture of soft-soap, sulphur, quassia and water is sprayed on the growing hop-plants by means of a hand-pump or a machine-pump, drawn by horse or motor power. Tobacco infusion is also used. Enterprising growers wash as soon as the aphis appears in their plantations.

SULPHURING.

The use of flowers of sulphur has long been known as an excellent antidote to the mildew. It is dispersed, by means of a special machine, over the whole plant before the burr develops into a hop.

PICKING.

The gathering of the hop-crop, which must be done at the precise period of ripeness when the quality and flavour are at their full, and before the hops begin to fall to pieces, is done as quickly as possible, and men, women and children from

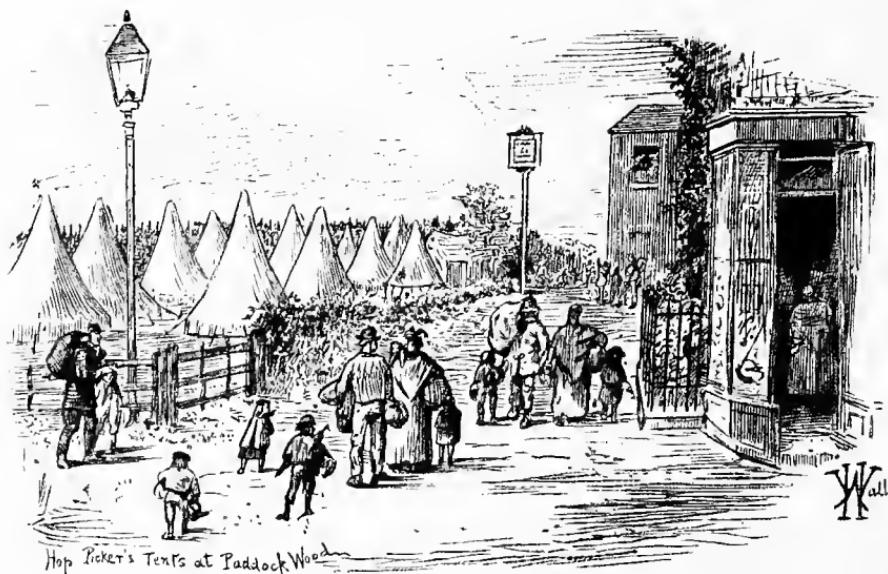


FIG. 7.—*Hop-pickers at Paddock Wood.*

London and the provincial towns, and from the neighbourhood of the hop-gardens, are employed in the work. In certain parts of East Kent five-bushel wicker baskets are used to contain the hops as they are pulled off the bines. In other districts, bins constructed of light wooden frame-work and a large receptacle of rough sacking or canvas, take the place of the large baskets.

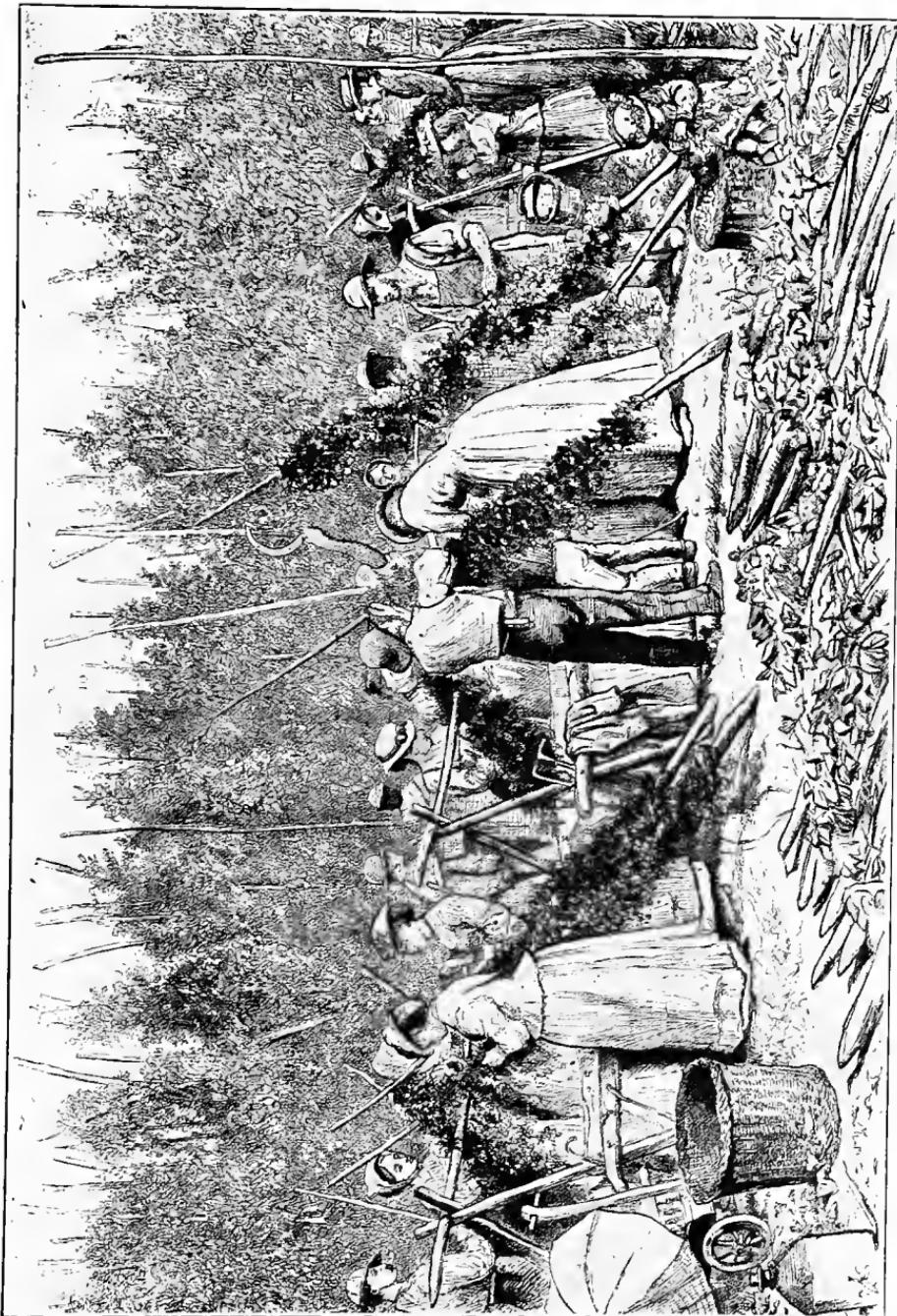


FIG. 8.—*Hop-pickers at work, 1874.*

Men, known as bin-men, are employed to cut the hop-bine near the ground, up-root the poles, and bring them to those who pick the hops.

The large baskets of East Kent are of known capacity, but during the process of picking there is a tendency for the hops to sink down in a way which would tell unfairly to the hop-picker. This is remedied by horizontal strings in the basket which, upon being pulled, tend to hover-up the hops.

In modern days when the wire-system prevails, bins are moved along to the hops, the top string is cut allowing the hops to fall over the bin. The hops are then quickly stripped into the bin.

The score of the number of bushels of hops picked has long been kept in a very ancient manner, by means of wooden tallies, somewhat resembling exchequer tallies. These are sticks or strips of wood about 16 inches long, cut into two pieces, the tallyman retaining one part, and the picker retaining the other. They are brought together when required for the recording of the amount picked, a file being employed for marking the two pieces at once with a narrow channel or grove. The slight irregularities in the depth, direction and position of the marks so made form the best test of the genuineness of the complementary parts of the tally. This custom is now confined to East Kent.

In other districts the amount of hops picked is measured by the “measurer” and recorded in writing by the “booker,” who also enters it in the picker’s book.

DRYING.

The great importance of the judicious and sufficient drying of hops has been known from the earliest period of hop-growing in Kent. Full directions for the drying process are given by Reynolde Scot, who wrote at the latter end of the sixteenth century. He also gives plans and sections showing the construction of the oast-house and furnace. In those early times, of course, the method of constructing the drying apparatus was primitive, and directions for handling the hops indicate a rather rough-and-ready treatment; but in Scot’s book, as in all early accounts, the main principles inculcated are the same as they are to-day. The moisture of the hop must be driven off by a rapid current of hot air.

Bradley, who wrote and published his *Riches of a Hop Garden* in 1729, mentions the use of a hair-cloth upon which the hops were spread out for drying in a layer of at least six inches. The same writer gives, on page 95 of his book, a ground plan of the old type of hop-oast and kiln, differing but little from that figured by Reynolde Scot. One end of the building is provided with a floor on which

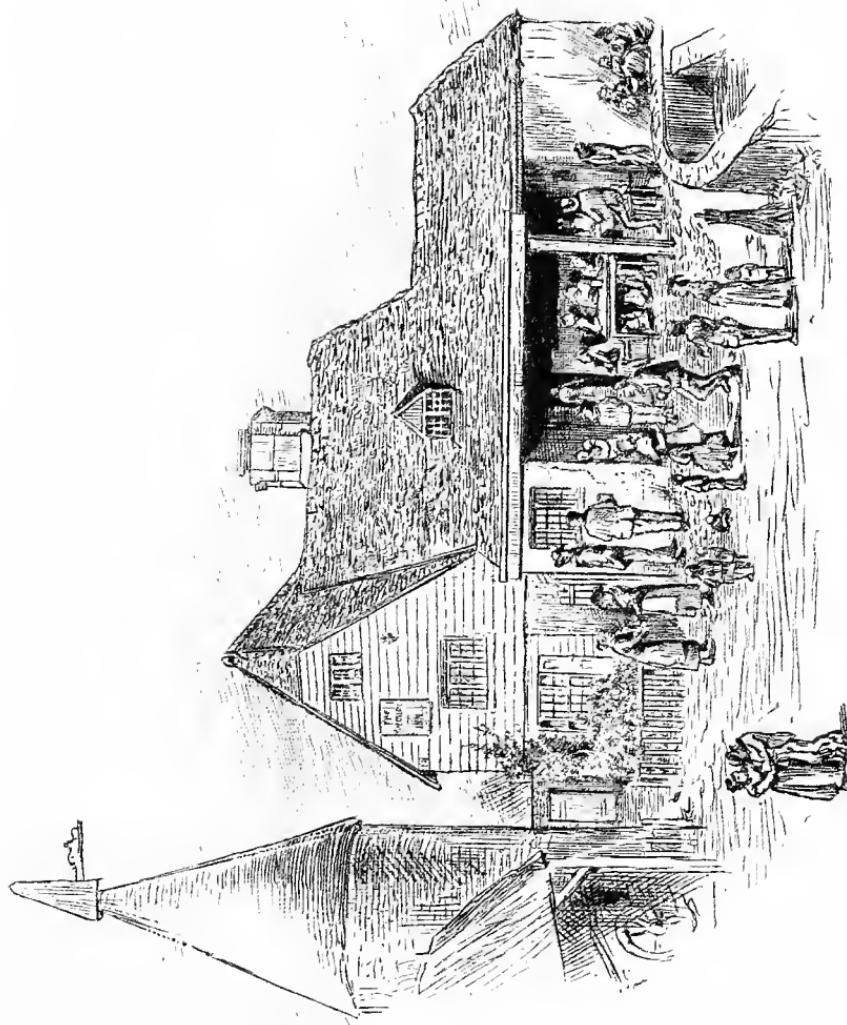


FIG. 9.—*The Chequers Inn, at Tudeley, Kent, on a Saturday night.*

the green hops are placed, and the other has an apartment in which the dried hops are placed to cool, preparatory to being packed in bags or pockets.

Lance, whose *Hop Farmer*, 1838, is a storehouse of important information on the subject of hops in the earlier half of the 19th century, mentions the following as the main points to be aimed at in drying hops: they should be so dried as to retain a natural greenish yellow hue; the seeds should be dry and hard, and the stalks brittle; heat should be applied equally all over the drying floor, and the hops should not be made damp by the fall of condensed moisture or reek; drying is complete when hops and stalks are brittle.

Wood, charcoal, and turf were the fuels formerly in use for drying. The object was to obtain as much heat as possible without smoke. For this purpose cast-iron furnaces were introduced which could be fed with fuel near the entrance, the main part of the smoke being consumed in its enforced passage through the fire beyond.

The cone-shaped roof of the kiln above the drying-floor, and the surmounting cowl moving with the changing wind, by which the moisture was carried off, were well-known in the early part of the 19th century, if not indeed at the end of the 18th century.

Anthracite and charcoal are the two kinds of fuel now most in use for drying hops, and great improvements in drying have been effected by the introduction of the hot-air system invented by Messrs. William Arnold & Sons, of Branbridges, Paddock Wood, Kent.

POCKETING.

As soon as hops are sufficiently dried and cooled they are pressed closely into pockets made of strong and closely-woven canvas. From the accounts published in old books on the subject it is evident that there were two kinds of receptacles used for the packing and marketing of hops, namely (1), rough, common bags made of refuse hemp, fine tow and hay intermixed, and calculated to contain $2\frac{1}{2}$ cwt. of hops of inferior, or discoloured quality, and hops of later picking; and (2), pockets made of strong canvas, as above, with a capacity of about $1\frac{1}{2}$ cwt.* for the finest and best-flavoured hops.

In order to fill the pockets tightly and evenly with hops, the upper part of the pocket was sewn to a wooden hoop so as to keep the mouth open for the reception of the dried hops. This wooden hoop, or ring, was made a little larger than the circular hole cut in the drying-floor through which the pocket was passed.

* The pockets for hops in the Farnham and Hampshire districts are made of finer cloth, and contain from 2 to $2\frac{1}{2}$ cwt. of hops.

Originally the hops were pressed tightly down into the pocket by a man or lad standing within it. An improved method of pressing was afterwards introduced in which a wooden lever was



FIG. 10.—*Hop-pocket ready for filling.*

employed. At the present time a simple pressing-machine, worked by a crank moving a small cog-wheel in connection with a larger cog-wheel—mechanical leverage—is used.

We find that as early as 1838 there was a patent hydraulic press in use for the packing of hops. This was invented by Bramah, and was so successful that by its means hops could be compressed to the hardness of a soft deal board. One hundred pounds of hops were in this way so diminished in bulk as to occupy only two cubic feet of space.

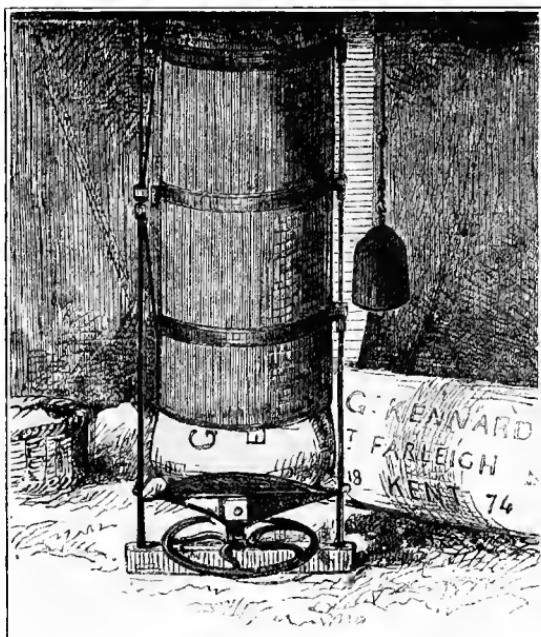


FIG. 11.—*Case for packing pockets of hops, 1874.*

In the present day the weight of the cloth for hop-pockets is 24 ozs. per yard, and the quantity 5 yards, making a total of $7\frac{1}{2}$ lbs. per pocket, which with a further half-pound allowed for string and marking-ink brings the total weight up to 8 lbs. per pocket. The tare allowed the buyer is 6 lbs.

MARKING.

In the earlier part of the 19th century each district had a person appointed by the Excise whose duty it was to see the hops weighed and mark the weight on the pocket, also to seal the pocket by marking a large black ink cross over the opening. The year of growth, the grower's name, parish and county had to be marked plainly on the pocket. Pockets containing hops grown in Kent were generally marked with a rampant horse in allusion to the ancient badge of the county. The Farnham hops were marked with a bell, and those from Sussex with a crowned shield charged with six birds.

HOP-GROWING DISTRICTS.

The acreage of land under hops in Kent is, and always has been, much greater than that in the other English counties in which hops are grown.

The following were the acreages of hop-lands in the six principal hop-growing counties in 1880 and 1907 :—

	1880.	1907.
Kent	42,977	28,169
Sussex	9,409	4,243
Herefordshire	5,934	6,143
Hampshire	3,038	1,842
Worcestershire... ...	2,760	3,622
Surrey	2,328	714

In the year 1866 Essex had an area of 137 and Suffolk of 127 acres of land under hops, but by the year 1880 the amount had been very much diminished. Nineteen other English counties are recorded as having, at various times towards the latter part of the 19th century, small areas under hops, but in almost negligible and declining amounts.

The reason why particular parts of the country are devoted to hop cultivation is to be found in the special suitability of the soil. This suitability has been discovered by the experience of hop-farmers, but it is so intimately related to the geological character of the district that, generally speaking, a geologist could easily predict in what neighbourhoods hop-gardens are likely to be found.

Kent.—There are five well-defined hop-growing districts in Kent :—

(1) East Kent.—A district extending from Chatham to Canterbury and beyond. The clays and loams in this area grow the finest hops of Kent.

(2) Mid-Kent.—Here the hop-gardens, mostly on the soils of the Lower Greensand, produce Goldings of very high quality and of great brewing value.

(3) North Kent.—A small district producing hops which rank between those of East Kent and Mid-Kent.

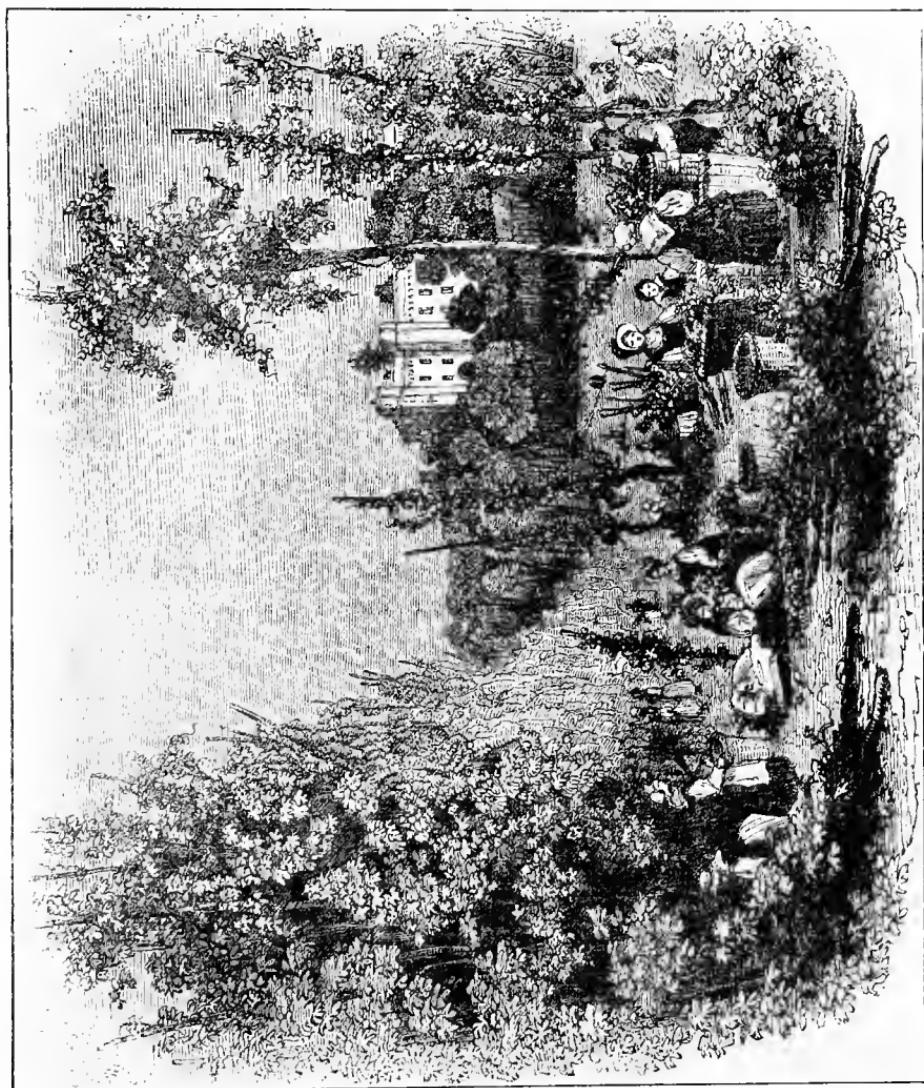


FIG. 12.—*Hop picking at Farnham, Surrey, 1855.*

(4) West Kent.—A comparatively small district.

(5) Weald of Kent.—This is a very large and productive hop country lying between Edenbridge on the west and Headcorn on the east; southwards it extends to Tunbridge Wells, Lamberhurst, and Hawkhurst and Tenterden.

Sussex.—Hop-growing is confined to the eastern part of Sussex. Some of the best land yields heavy crops, as much as a ton, or even a ton and a half per acre being recorded. The sort most generally grown now is Fuggle's. Mayfield Grapes, Jones's and Colegate's are practically extinct. The gardens are mostly small and scattered, and are generally situated in sheltered valleys in the richest land.

Surrey and Hampshire.—Hop-growing in these two counties is confined to a space 20 miles long by about 6 miles wide situated on or near the western boundary of Surrey. The Farnham hops have long been famous for their excellent quality.

Worcestershire.—The hop-gardens, or hop-yards (as they are called), are chiefly in the western part of the county and produce hops of excellent quality. Hops are grown largely in the Teme Valley.

Herefordshire.—A considerable acreage is under hops on the eastern side of the county. The best hops are grown on the banks of the River Lug and upon the equally fertile alluvium of the valley of the Wye.

In both Worcestershire and Herefordshire great progress has been effected in hop cultivation in recent years, and very excellent hops are now grown.

CHAPTER III.

THE HOP-MARKET. PRICES. DUTIES ON HOPS.
HOP CONTROL. STATUTES OF THE REALM.

For many years past the main market for hops in the south-east of England, including those of Kent, Sussex, Surrey and Hampshire, has been in the Borough High Street, Southwark. Prefixed to Bradley's little book on the *Riches of a Hop-Garden*, 1729, is an engraving (see frontispiece) giving an animated picture of the Borough Hop Market. It represents the butchers' and green-grocers' stalls, and on the ground-floor of the old Town Hall is the Hop Market. Several pockets of hops in the Market and other pockets on adjacent two-wheeled carts are shown. Many of the people attending the market as well as those in the local inns are shown drinking beer.

There are several noteworthy points about the engraving. One sees in the distance, for instance, the embattled gateway which forms the entrance to London Bridge. Near it is the church of St. Thomas, and the Cock Public House is also shown near the market.

There were other hop markets at Canterbury, Maidstone, Hastings, Hereford, Worcester, and the

annual Hop Fairs at Worcester on September 19th, and Weyhill, Hampshire, on October 12th, and Maidstone October 17th.

Certain rules governed the selling and buying of hops. It was the rule that hops, in bulk, should be actually brought to market before being sold, and in 1800 one hop-grower was fined £500 and imprisoned for a month for forestalling the hop market. The offender was Samuel Ferrand Waddington, a man who resided near Tonbridge where he had purchased a large number of hop-gardens with a view to controlling the price of their produce.

PRICES OF HOPS.

Some valuable information as to the prices at which hops have been sold from the 16th century downwards is furnished by J. E. Thorold Rogers's *History of Agriculture and Prices in England*.

In the following figures it is probable that the prices of many of the hops from Kent, Surrey, Sussex and Essex appear under the heading of the London hop markets, but local prices have been quoted where possible.

The earliest prices recorded are as follows : —

		Per cwt.
1583	£1 6
1584	£1 16
1590	£1 8 Cambridge

		Per cwt.	
1591	...	£2 18 Cambridge.
1608	...	£2—£5 ,
1699-1700	...	£4—£7 Dartford.
1700-1701	...	£6 ,
1701-1702	...	£1 15 ,
	...	£1 14—£1 18...	London.
1702-1703	...	£5 ,
1709	...	£3 5—£4 5...	,,
1710	...	£3—£5 12	... ,
	...	£7 10—£8 15	,,
1714	...	£10—£13...	,,
1750	...	£7 7 6...	,,
1790	...	£3 10—£5 15...	Kent.
1793	...	£11 11—£13 13	E. Kent.
	...	£10 10—£11 10	W. Kent.

By the courtesy of Messrs. Tabrum & Son we reproduce their table of the acreage, total growth, imports and exports, and prices of Hops from the year 1813 to 1915. (See page 48.)

Hops are known to have been imported in considerable quantities by the merchants of Southampton during the 15th and 16th centuries. From the town records of Southampton it appears that in the year 1608 the price of hops was £8 per cwt., whilst the price of malt was only 2s. a bushel.

Considerable advantages to the hop trade have arisen from the adoption of modern scientific methods. The principle of cold storage is now largely adopted by the brewers, and in this way the delicate flavour of the hop is well preserved.

YEAR	ACREAGE	TOTAL GROWN cwt	IMPORTS cwt	EXPORTS cwt	TOTAL FOR HOME CONSUMPTION cwt	ESTIMATED CONSUMPTION cwt	AVERAGE PRICES per cent. from Sept. to Dec. 31st			YEAR
							Mid and East Kent	West of Kent	Sussex	
1813	39,521	248,016	nil	1,092	243,924	191,440	190/-	156/-	98/-	1813
1816	44,219	86,264	13	993	85,304	178,569	280/-	252/-	231/-	1816
1819	51,014	480,990	47	1,022	450,015	196,516	90/-	78/-	65/-	1819
1825	46,718	45,344	2,999	10,893	37,450	312,547	420/-	360/-	330/-	1825
1826	50,471	151,959	1,874	3,960	508,873	270,843	110/-	92/-	95/-	1826
1835	53,816	438,274	nil	9,784	428,490	377,174	120/-	92/-	76/-	1835
1840	44,085	63,526	106	8,291	55,341	382,317	294/-	270/-	250/-	1840
1846	51,948	452,714	3,283	4,581	451,416	378,302	119/-	93/-	80/-	1846
1849	42,798	148,668	5,271	2,835	151,104	343,016	178/-	147/-	132/-	1849
1854	53,825	88,188	119,677	12,047	195,818	385,107	400/-	330/-	300/-	1854
1855	57,757	743,047	24,662	19,180	748,529	392,953	147/-	105/-	93/-	1855
1861	47,941	213,857	149,176	9,321	353,712	436,037	187/-	162/-	140/-	1861
1870	60,680	700,000	127,853	21,913	805,940	568,910	95/-	63/-	45/-	1870
1875	69,171	700,000	256,444	18,067	938,357	692,285	122/-	93/-	80/-	1875
1878	71,789	700,000	168,834	17,324	851,510	716,156	102/-	73/-	60/-	1878
1879	67,871	160,000	262,765	9,508	413,257	664,443	220/-	189/-	150/-	1879
1880	66,698	440,000	195,987	20,892	615,095	686,219	105/-	83/-	70/-	1880
1881	64,943	455,000	147,559	23,190	579,369	610,543	150/-	126/-	100/-	1881
1882	65,619	120,000	319,620	14,094	425,526	497,687	420/-	375/-	320/-	1882
1883	68,016	560,000	129,900	22,812	667,088	484,658	182/-	135/-	112/-	1883
1884	69,289	420,000	256,777	18,256	658,621	495,537	160/-	130/-	115/-	1884
1885	71,327	509,170	266,952	14,458	761,664	499,758	103/-	80/-	80/-	1885
1886	70,127	776,144	153,769	69,323	860,580	485,623	82/-	68/-	42/-	1886
1887	63,709	457,515	145,122	27,760	574,877	499,087	100/-	80/-	55/-	1887
1888	58,494	281,291	216,606	14,811	483,086	504,222	203/-	160/-	130/-	1888
1889	57,724	497,811	200,690	18,089	680,412	511,514	85/-	63/-	50/-	1889
1890	54,551	283,629	189,028	12,372	459,285	551,219	258/-	200/-	170/-	1890
1891	56,148	436,716	195,264	9,740	622,240	570,130	152/-	126/-	105/-	1891
1892	56,259	413,259	187,507	10,673	580,083	575,020	168/-	135/-	128/-	1892
1893	57,564	414,929	204,392	18,748	600,573	573,291	150/-	135/-	120/-	1893
1894	59,535	636,846	189,155	20,839	805,162	674,691	88/-	67/-	45/-	1894
1895	68,940	563,396	217,161	13,132	767,425	565,687	90/-	66/-	49/-	1895
1896	54,217	463,186	207,041	13,303	646,926	604,095	95/-	60/-	45/-	1896
1897	50,863	411,086	164,164	18,494	559,746	610,751	105/-	70/-	66/-	1897
1898	49,735	356,598	244,136	20,369	880,345	636,268	155/-	140/-	130/-	1898
1899	51,843	861,426	180,233	14,700	826,959	651,753	80/-	65/-	56/-	1899
1900	51,308	347,894	198,494	18,585	527,803	662,339	138/-	117/-	103/-	1900
1901	51,127	649,387	116,042	22,702	742,727	649,903	68/-	56/-	48/-	1901
1902	49,031	311,041	191,24	23,236	479,129	581,703	155/-	135/-	130/-	1902
1903	47,938	428,068	113,448	20,279	506,787	620,521	140/-	105/-	100/-	1903
1904	47,794	182,350	165,667	20,069	575,925	641,836	100/-	185/-	170/-	1904
1905	48,467	690,963	103,953	25,155	779,284	595,505	75/-	60/-	50/-	1905
1906	46,722	265,685	22,619	14,761	443,566	610,551	135/-	115/-	124/-	1906
1907	44,938	374,129	301,324	17,344	589,459	610,334	90/-	65/-	45/-	1907
1908	38,921	470,767	279,916	22,324	748,423	601,735	25/-	20/-	40/-	1908
1909	32,534	274,434	140,777	22,509	333,032	586,575	165/-	125/-	160/-	1909
1910	32,586	362,475	176,781	13,676	465,780	584,787	110/-	100/-	95/-	1910
1911	33,056	348,023	169,844	47,017	430,190	414,373	220/-	205/-	200/-	1911
1912	34,429	373,418	44,886	20,322	396,997	586,796	135/-	125/-	120/-	1912
1913	35,476	255,661	362,184	27,376	449,446	603,090	205/-	185/-	185/-	1913
1914	36,261	587,253	97,306	23,633	530,741	601,492	90/-	85/-	75/-	1914
1915	34,200	234,161	260,337	9,179	445,254	137/-	115/-	112/-	120/-	1915

FIG. 13.—Acreage, total growth, imports, exports, &c., of hops.

The following is a copy of a note of the sale of hops at a record price, the original being preserved in the offices of Messrs. W. H. & H. Le May, Hop Factors:—

68, BOROUGH HIGH STREET,

LONDON, S.E.,

August 4th, 1882.

Sold for and on account of Thomas Manwaring, Esq.,

By W. H. & H. Le May,

The First Pocket of Kent Hops,

grown Season 1882.

One Pocket Brenchley Hops.

Cwt. qrs. lbs.

Gross ... 1 1 6

Tare ... 0 0 6

Nett ... 1 1 0 at £50 per cwt. £62 10 0

Commission £1 13 0

Carriage 0 5 7

Rent and Insurance 0 0 2

————— 1 18 9

————— £60 11 3

W. H. & H. LE MAY,

Hop Factors.

LIST SHOWING DATE OF ARRIVAL OF
FIRST POCKET OF HOPS IN THE BOROUGH
FOR FORTY-FIVE YEARS, 1854 - 1898.

After this date all interest in the arrival and sale of the first pocket ceases.

DATE.	GROCER'S NAME	WHERE CROWN.	PRICE PER QWT.
1854. Aug 7.	W. HOWKS	TICHEMURST	£20. 0. 0.
1855. " 23.	J. KARLINSKE	VALING	£10. 17. 0.
1856. " 16.	W. HOWKS	TICHEMURST	£7. 0. 0.
1857. " 17.	J. SMITH	KYE	£10. 0. 0.
1858. " 17.	W. MANNARING	VALING	£8. 8. 0.
1859. " 12.	W. MANNARING	VALING	£8. 8. 0.
1860. " 31.	T. MANNARING	MARL PL. BRENCHLEY	£22. 6. 0.
1861. " 12.	J. M. HOOKER	BRENCHLEY	£25. 0. 0.
1862. " 12.	J. MARSHALL	VALING	£10. 10. 0.
1863. " 14.	T. MANNARING	MARL PL. BRENCHLEY	£12. 0. 0.
1864. " 14.	A. WHITE	VALING	£8. 8. 0.
1864. " 18.	A. WHITE	VALING	£7. 0. 0.
1865. July 31	A. WHITE	NETTLESTEAD	£10. 0. 0.
1866. Aug 14.	G. AUSTIN	RATTUE	£16. 16. 0.
1867. " 19.	J. N. THOMPSON	BRENCHLEY	£31. 10. 0.
1868. July 21.	COLES CHILDE	BRONLEY	£8. 8. 0.
1869. Aug 13	G. MUNNIN	BRENCHLEY	£10. 0. 0.
1870. July 15.	COLES CHILDE	BRONLEY	£10. 0. 0.
1871. Aug 11	G. MUNNIN	BRENCHLEY	£17. 0. 0.
1872. " 6.	COLES CHILDE	BRONLEY	£11. 11. 0.
1873. " 12.	COLES CHILDE	BRONLEY	£14. 14. 0.
1874. " 5.	J. N. THOMPSON	BRENCHLEY	£37. 2. 0.
1875. " 8.	J. N. THOMPSON	BRENCHLEY	£10. 10. 0.
1876. " 8.	E. MORG	FRITTENDEN	£15. 16. 0.
1877. " 4.	W. MORG	FRITTENDEN	£14. 0. 0.
1878. July 24.	F. P. THIRKELD	CHART TUNTON	£8. 8. 0.
1879. Aug 20.	A. BARTHOLOMEE	ETAPLEHURST	£28. 0. 0.
1880. " 4.	J. S. GILLET	BRENCHLEY	£8. 0. 0.
1881. " 9.	A. LUCY	BRENCHLEY	£15. 0. 0.
1882. " 4.	T. MANNARING	MARL PL. BRENCHLEY	£50. 0. 0.
1883. " 4.	G. H. SEALEY	MORSHAMPTON	£20. 0. 0.
1884. July 20.	E. A. WHITE	VALING	£25. 0. 0.
1885. Aug 1.	E. A. WHITE	VALING	£2. 0. 0.
1886. July 27.	E. A. WHITE	VALING	£10. 0. 0.
1887. " 28.	E. A. WHITE	VALING	£10. 0. 0.
1888. Aug 8.	E. A. WHITE	VALING	£15. 0. 0.
1889. July 20.	E. A. WHITE	VALING	£12. 0. 0.
1890. " 19.	E. A. WHITE	VALING	£50. 0. 0.
1891. Aug 8.	C. H. CALLETT	MORSHAMPTON	£8. 0. 0.
1892. Aug 5.	E. DAY	MARSH	£16. 0. 0.
1893. July 24.	J. LARKE	MARSH	£26. 0. 0.
1894. Aug 6.	W. R. THOMPSON	CAPEL	£10. 0. 0.
1895. July 23.	T. DAW	EDWELL	£11. 11. 0.
1896. " 27.	W. R. THOMPSON	CAPEL	£12. 0. 0.
1897. Aug 9.	T. SAVAGE	MARSH	£15. 0. 0.

For the last 22 years (from 1876 to 1897) all the "First Pockets" were consigned to and sold by MESSRS W. H. & H. DE MAY, 67, Borough High St., S.E.

FIG. 14.—List of first pockets of Hops, 1854-1897.

For twenty-two consecutive years (1876-1897) the first pocket of hops was consigned to these gentlemen.

A gold medal bearing the following inscriptions was struck and presented to each member of the firm of Messrs. W. H. & H. Le May in the year 1882:—

Presented
to
W. H. & H. LE MAY,
Hop Factors,
to commemorate
their successful exertions
to raise the value
of the Hop Crop
in the
Memorable Year
of 1882.

Subscribed to and
Presented
by
the
principal Hop-growers
of
Kent and Sussex.

DUTIES ON HOPS.

¶ Hop-growing received great encouragement in the year 1862 when the excise duty on hops was abolished. This tax on the produce of hop-gardens amounted to an average annual charge of nearly £7 per acre. It was specially unfair to growers in

the Weald of Kent where the yield of hops was large and the value of the produce low ; whilst in East and Mid-Kent and in the Farnham district, where higher-priced hops are grown, the burden was comparatively light. So unfair was the duty that in some cases the hop farmer had to pay as much as £15 per acre, although his hops did not realise £3 per cwt.

In the year 1862, also, the import duty on hops was taken off. Owing to a very serious *aphis* blight very high prices were obtained for hops in 1882. The average price of English hops in the season 1882-3 was £18 10s. per cwt., and some of the best samples realised £32 per cwt.

Some valuable information as to fluctuations of prices of hops, and injury to the English industry caused by German and American competition, was laid before a Select Committee on the Hop Industry, a committee organised in 1908. The late Mr. Edward Le May took a very active part in this commission and gave evidence before it. In the voluminous report issued as a Blue Book the evidence of several expert witnesses is printed in full, and the whole tendency of the evidence was in favour of the imposition of a duty on foreign hops imported into England. It was pointed out that such a duty would at once encourage the English hop-growers and benefit the labouring classes.



FIG. 15.—Trafalgar Square Meeting.

Owing to foreign competition the acreage of hops had been reduced from 71,789 acres in 1878 to 44,938 acres in 1907, a reduction of 26,851 acres. In consequence of continued free imports the acreage was further reduced to 36,661 in 1914.

On Saturday, 16th May, 1908, a monster and enthusiastic demonstration took place in London as a protest against the injury inflicted on the English hop trade by free importation of foreign hops. Processions from the London railway stations excited great popular interest. At the great meeting held in Trafalgar Square, resolutions were adopted in favour of imposing a duty of 40s. a cwt. on imported foreign hops.

HOP CONTROL.

The Great War has had an important effect on hop growing. The limitations imposed on brewing have naturally been reflected in the amount of hops required.

In the year 1917 the Board of Agriculture ordered the acreage of hops in England to be reduced to 50 per cent. of those grown in 1914, the remainder of the hop gardens to be grubbed.

A Controller of Hops was appointed in 1917, and the whole of the English hop crop, and the growths of hops for the years 1914, 1915, and 1916, both English and foreign, remaining on the market,

were taken over at a valuation, the money being provided by the Government. Factors were employed to pass the hops into the Control and to sell them for the Control to the merchants who in turn sold them to the brewers.

A committee of persons interested in hops, consisting of four growers, four factors, four merchants, four brewers, and four representatives of the Board of Agriculture, was formed for the purpose of advising the Controller, Mr. G. Foster Clark, of Maidstone, who had been appointed Controller by the Board of Agriculture.

The whole business of hop control was conducted in accordance with the usual custom of the trade, at values fixed by the Control.

In the year 1918 the average amount to be paid for hops was fixed by the Hop Controller at £16 10s. per cwt. to the grower. The maximum price to be charged to the brewers was £19 5s.

The produce and money value of the hop-crop have always been subject to great variations from year to year. A good deal of betting as to the results of the crop and the amount of duty payable on it has taken place at various times. The following table shows at a glance the fluctuations in the betting annually between the years 1812 and 1862.

FLUCTUATIONS IN THE BETTING THE HOP DUTY.

MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	IT PAID	
						IN OLD DUTY	IN NEW DUTY
1812 100 140 200 300	70 140 200 300	60 140 200 300	40 140 200 300	70 140 200 300	70 140 200 300	30,561 19 3	1812
1813 110 120 125 130	110 140 125 130	125 140 130 130	130 140 130 130	130 140 130 130	130 140 130 130	31,462 9 3	1813
1814 115 140 155 160	105 140 125 130	140 117 134 132	140 125 130 130	140 142 155 160	140 142 155 160	140,292 6 2	1814
1815 100 160 80 84	70 85 100 90	70 85 100 90	70 85 100 90	85 95 100 90	85 95 100 90	103,878 16 34	1815
1816 140 150 150 140	140 142 150 150	150 150 145 145	130 120 110 100	90 85 80 80	75 70 65 60	46,302 15 84	1816
1817 150 145 155 170	100 85 90 90	100 95 90 90	85 85 75 70	85 85 75 70	85 85 75 70	66,522 2 64	1817
1818 150 140 140 130	120 115 140 140	140 125 95 80	120 130 130 130	145 150 160	145 150 160	199,465 13 61	1818
1819 120 98 28 92	110 120 120 120	110 120 120 120	110 120 120 120	170 200 210 220	220 230 230	42,976 2 2	1819
1820 140 140 140 130	110 100 130 130	130 130 100 85	75 75 85 80	90 85 80	75 75 85 80	17,630 9 64	1820
1821 130 115 115 100	100 110 118 110	110 120 130 145	130 120 130 145	200 200 180	200 180	131,609 10 84	1821
1822 100 100 90 95	110 105 105 120	120 130 130 125	120 140 140 140	200 200 200	200 200	204,724 14 92	1822
1823 105 100 120 100	90 75 75 90	60 45 30 40	30 20 20 20	20 20 20	20 20 20	26,857 11 94	1823
1824 110 120 100 120	120 135 130 120	120 130 130 120	140 130 130 130	140 150 150	140 150 150	118,812 6 61	1824
1825 120 110 80 60	65 55 40 20	20 18 17 20	21 18 20 22	30 24 22	30 24 22	24,317 0 111	1825
1826 120 140 140 130	150 160 170 180	190 180 195 200	205 215 220 215	250 250 250	250 250 250	209,431 0 94	1826
1827 120 110 110 50	55 45 35 55	45 75 110 110	100 90 110 120	130 120 125 140	130 120 125 140	110,816 6 23	1827
1828 120 110 80 100	140 150 160 170	180 190 190 180	180 190 190 180	180 185 185 172	180 185 185 172	172,027 10 113	1828
1829 130 120 120 120	80 70 60 50	35 30 35 35	35 30 30 35	35 30 30 35	35 30 30 35	39,956 10 64	1829
1830 120 110 100 100	130 120 115 90	90 85 100 140	120 100 90 90	105 105 105 95	105 105 105 95	84,017 8 14	1830
1831 120 115 105 120	130 110 150 110	140 110 140 140	140 110 150 150	180 180 180 180	180 180 180 180	171,864 10 14	1831
1832 130 130 120 130	120 110 150 150	160 150 150 150	160 150 150 150	160 150 150 150	160 150 150 150	130,018 4 36	1832
1833 130 130 140 150	150 165 170 170	170 170 180 190	160 170 170 170	190 190 190 190	190 190 190 190	156,005 7 9	1833
1834 130 120 110 100	95 100 95 100	80 80 60 90	100 110 110 110	130 140 150 160	130 140 150 160	169,113 11 21	1834
1835 120 125 125 130	150 170 170 180	210 200 190 200	220 220 220 220	240 240 240 250	240 240 240 250	230,207 2 114	1835
1836 130 150 160 160	160 175 170 180	210 240 220 200	190 185 190 200	205 190 190 185	205 190 190 185	200,332 12 111	1836
1837 150 150 155 150	150 150 150 150	160 160 160 160	160 160 160 160	190 180 180 180	190 180 180 180	178,578 5 63	1837
1838 155 160 165 165	160 170 170 170	160 170 170 170	160 170 170 170	160 170 170 170	160 170 170 170	171,556 8 104	1838
1839 150 150 150 150	160 165 160 180	190 180 190 200	200 200 200 200	210 210 210 200	210 210 210 200	205,547 7 74	1839
1840 150 150 150 150	150 140 120 90	80 70 50 40	40 30 28 32	28 32 32	28 32 32	34,991 16 14	1840
1841 145 145 150 145	145 130 155 160	160 145 140 160	160 165 170 170	170 165 160 160	170 165 160 160	116,159 1 61	1841
1842 140 140 140 110	150 145 130 145	130 140 120 140	130 150 150 150	130 160 160 160	130 160 160 160	109,776 0 61	1842
1843 140 140 140 140	140 140 110 140	130 140 130 140	130 140 130 140	130 140 130 140	130 140 130 140	133,308 18 33	1843
1844 150 150 150 150	140 140 140 150	145 145 135 130	130 125 120 130	130 125 120 130	130 125 120 130	140,222 17 24	1844
1845 150 150 150 150	150 150 150 160	170 170 180 190	190 180 190 190	180 180 180 180	180 180 180 180	158,033 2 24	1845
1846 115 110 110 100	95 110 110 120	140 145 150 160	160 165 170 170	170 175 175 170	170 175 175 170	212,229 15 71	1846
1847 140 145 145 150	150 155 160 120	150 165 160 180	180 185 185 190	180 175 175 180	180 175 175 180	212,905 14 62	1847
1848 150 160 165 170	170 180 190 195	200 210 190 200	200 180 190 200	180 185 185 180	200 205 210 210	205 205 212,416 8 12	1848
1849 130 130 130 100	100 90 80 100	80 70 60 70	60 50 45 50	40 30 28 32	28 32 32	79,791 7 12	1849
1850 120 120 140 160	160 160 160 140	160 200 190 200	220 220 210 200	190 190 190 190	200 200 190 200	235,576 14 61	1850
1851 100 100 100 100	100 100 100 100	100 110 100 85	85 95 100 110	110 120 110 110	110 115 120 120	125,285 13 69	1851
1852 150 150 150 150	135 160 170 160	170 180 170 160	190 180 190 190	200 200 210 200	210 210 200 200	24,466 2 4	1852
1853 150 150 150 150	150 150 150 150	140 140 140 140	150 150 150 150	160 160 160 160	160 160 160 160	132,077 0 43	1853
1854 170 170 170 170	170 160 150 140	140 140 130 120	140 140 130 120	150 150 140 130	150 150 140 130	47,359 9 10	1854
1855 200 200 200 200	210 210 225 230	240 250 270 270	270 270 290 300	300 310 310 310	300 310 310 310	398,636 6 62	1855
1856 120 150 150 150	140 160 160 120	200 200 220 220	220 220 260 260	260 270 280 290	270 270 280 290	266,899 16 82	1856
1857 150 150 150 140	110 110 110 110	140 140 115 115	115 115 120 120	120 120 120 120	120 120 120 120	228,294 1 11	1857
1858 150 150 150 150	145 160 200 200	210 220 220 230	210 210 210 220	230 230 230 230	230 230 230 230	234,001 14 62	1858
1859 150 150 150 150	142 140 175 180	220 225 220 220	260 260 260 260	270 270 270 270	270 270 270 270	328,070 2 192	1859
1860 200 200 200 200	190 180 180 170	180 180 170 160	90 80 70 60	70 60 50 40	40 40 30 20	53,465 1 11	1860
1861 150 140 130 100	70 70 60 50	70 70 60 50	60 50 40 30	50 40 30 20	40 40 30 20	114,701 6 11	1861
1862							1862

FIG. 16.—Betting on the Hop Duty, 1812-1862.

STATUTES OF THE REALM RELATING TO HOPS.

The most important of the Statutes of the Realm dealing with hops is one passed in the first year of James I (1603-4), chapter 18, entitled, “An Acte for avoyding of deceitfull sellinge, buyinge, or spendinge corrupte and unwholesome Hoppes.”

The Act sets out the frauds practised by foreign hop merchants who supply hops mixed with “leaves, stalkes, powder, sande, strawe and loggetts of wood, dross and other soile,” in order to increase the weight. It was provided that every person so offending should forfeit his hops. It was further provided that all brewers who should use hops in this unclean condition, whether they were imported or grown within the realm, should, in like manner, forfeit the hops; one part of the amount of the forfeiture to go to the king, and the other to the person who detected the fraud.

In the reign of Queen Anne there were passed two Acts of Parliament dealing with hops. In 1702 an “Act for the Relief of Masters of Hoys and other Vessels carrying Corn and other Inland Provisions within the Port of London,” provided that the customs dues should be limited to 1s. 8½d. for every hoy with a cargo not exceeding fifty quarters of corn or fifty bags of hops.

Another Act of 9th Anne, chapter 13 (1710), dealt with the importation of hops into Ireland.

In section xxxii. it was provided that the importation of hops into Ireland should be confined to those grown in Great Britain. Flemish hops were expressly prohibited, and a breach of this regulation involved forfeiture of the hops themselves and also of the ships in which they were conveyed. A duty of threepence per pound was laid on all hops imported.

In 1734 a duty of one penny per pound was imposed on all hops grown and cured in England. It was at the same time made obligatory on hop growers to furnish particulars of their hop grounds to the excise authority under a penalty of forty shillings an acre. All particulars of oast-houses and storage-houses had also to be furnished. A fine of £10 per cwt. was imposed for removing foreign hops from their pockets and re-bagging them in English pockets. In order to prevent or deter persons from defrauding the revenue, a penalty of £40 was incurred by using more than once the same pocket bearing the mark of the excise officer.

Another serious offence was to remove hops before they had been weighed and packed; the penalty was £50. Concealment of hops was punishable by the forfeiture of £20 and the concealed hops. The use of any bitter ingredient instead of hops in brewing rendered the brewer liable to a fine of £20.

The whole of the operations of drying, weighing and packing hops was carried out under the oversight of the excise officers. Timely notice had to be given them of all proposed operations, and severe fines were inflicted on defaulters.

In the earlier half of the 19th century* duties were payable in the March and October following the year of production. During the period 1819-1822 the payment of duty was made in September and November.

* Lance's book on *The Hop Farmer*, from which some of these particulars were derived, was written and published in 1838.

CHAPTER IV.

HISTORY OF HOP-GROWING. EARLY PICTURES.
HOPS IN ANCIENT TIMES. BOOKS RELATING TO
HOP-GROWING. SMALL GROWERS.

The three accompanying illustrations are photographic reproductions of perhaps the earliest pictures of the hop-plant:—



Humulus *hopfen*

FIG. 17.—Engraving of the Hop-plant. 1484¹

(1) Wood cut in a herbal printed by Peter Schovffer at Mayence in 1484. It is noteworthy that the strobiles are small in size and undeveloped in form. Another edition of the book was printed at Passau in 1485. (FIG. 17.)



FIG. 18.—Engraving of the Hop-plant, 1499.

(2) Wood cut of the hop showing larger and more definite strobiles, published in a book commencing "Incipit Tractatus de virtutibus herbarum," printed at Venice in 1499. (FIG. 18.)

(3) Wood block of the hop-plant, published in *Plantarum sive stirpium icones*, printed at Antwerp by C. Plantin in 1581. The same wood-block was afterwards used in Gerard's *Herbal*. By an error of the artist, the bine is shown climbing the pole in a contrary way to nature. (FIG. 19.)



FIG. 19.—Engraving of the Hop-plant, 1581

HOPS IN ANCIENT TIMES.

A hop garden is first mentioned in a deed of gift made by Pepin, father of Charlemagne, in 768. In the 14th century the hop was an important object of cultivation in Germany. From studies in the philology of the various names by which this plant is known among different tribes, it seems clear that the hop existed in Europe before the arrival of the Aryan people. Several different peoples must have distinguished and utilised the plant successively, each giving it a different name, and this goes to show that the hop was extensively known in Europe and Asia before it was used in brewing.

In the *Promptorium Parvulorum*, a very curious and remarkable English dictionary which is believed to have been compiled about the year 1440, we find hops mentioned, thus—

“ Hoppe: sede for beyre.”

Both the word and its definition may have been imported from Flanders, from whence it is probable beer was imported to England during the 15th century. This is most interesting as proving conclusively that hops were used in brewing beer at least as early as the first half of the 15th century.

The following recipe is given in Richard Arnold's *Chronicle (the Customs of London)*, first published in 1502 :—

“ To brewe Beer. x quarters malte, ij quarters wheet, ij quarters ootes. xl ll' weight of hoppys. To make lx barells of sengyll beer.”

The statement has been made that the use of hops was forbidden in the time of Henry VI in consequence of a petition to the House of Commons against “the wicked weed called hops,” but as the petition does not appear on the Rolls of Parliament, one may take leave to doubt the whole statement*.

Among the privileges conceded to strangers from the Low Countries who settled at Stamford, 1572, is a clause regarding the free exercise of husbandry, in which hops and all things necessary to gardens are mentioned.

Ale, an ancient drink very popular in England, was not hopped.† Beer, on the other hand, whose origin is more closely associated with Teutonic tribes, had a bitter flavour produced by the use of hops. In addition to the valuable tonic character they impart to beer, hops form its best known preservative. Until the 16th century all beer, as distinct from ale, drunk in England was imported from the Continent, where it was brewed in considerable quantities. Flanders and Germany were famous for their skill in brewing.

It would appear that the first beer brewed in London was made by strangers. This is indicated,

* See *Notes and Queries*, 12th May and 7th July, 1900.

† The ancient malted beverage of the Anglo-Saxons and English was certainly ale, and not flavoured with hops.

if not actually proved, by the following statement in Arnold's *Chronicle of London*, 1502 (1811 edition, pp. 87-88) :—

“ Where as the byere brewars straungers wyl not obey the wardeyns of the crafte of brewers nor suffer theym to serche as Englishe brewers doo. And where also as the sayd byer brewers make congregacions off theyr selfe and there make setaynders of straungers Flemyngis Duchemen contrary to certeyn ordynauncis made and aproved bee my Lorde Mayre and Aldirmen wherein is contryved that no straunger byere brewer shal retayn or sette a werke ony straunger unto tyme every suche straunger had presentyd aswel afore the Chamberleyn as afore the wardens of the crafte for the tyme beyng and at theyr presentement a fyne hadde be made for every straunger so sette a werke. Please it my Lorde Mayre Aldirmen and Comen Counseil considered that y^e prince of noble memorye Kynge Edward iiiij by his lettres patentis grantyd to the wardeyns of brewers and theyr successors the serche alle manner lycour made wyth malte to enact that the wardeins of brewers may have auctoryte and power to serche al mauer biere brewers according to the sayde graunte. Also that all congregacions of straungers bere brewers be fordone and no more used and that the presentement of byere brewers servauntis may be made afore the chamberleyn and wardeyns and their fynges of their presentacion bee had and levyd accordynge to the sayde acte upon certeyn penaltees therfore by yow to be ordeyned.”

The date when hops were first used in England in the brewing of beer has been stated in certain popular books of reference to be the year 1524. But this is not quite accurate, because earlier instances of their use for this purpose can be given. For example, in the churchwardens' accounts of the

parish of Stratton, Cornwall, under the year 1514, we find the entry “for hoppys, the laste brewyng iiijd,” and there is internal evidence pointing to the conclusion that this was not the first occasion when hops were so used.*

In a manuscript relating to the household of King Henry VIII at Eltham, January, 1530, is an injunction to the brewer not to put hops or brimstone into the ale.†

Household accounts of the establishments of the wealthy contain several entries which furnish evidence of the use of hops in brewing beer at this and subsequent dates in the 16th century. Further illustrations may be found in the household and privy purse accounts of the Lestranges of Hunstanton, Norfolk, for the year 1530.‡ These contain the following interesting entries relating to the purchase of hops:—

Itm pd the xxvijth day of July for vj ston of hoppys at ijs. iiijd. the stoon —	xiiij	—
It the ijd day of Septembre for half a hundred hoppys —	ix	iiij
It pd the iiijth day of Octobre to Robt. Banyard by the hands of John Siff for one hundred hoppys —	xvij	—
Itm pd xxvijth day of January to Frances the Flemyngh for cccxxxij lb hoppys at xijs. the hundredth —	xxxix	iiij

* *Archæologia*, Vol. XLVI, p. 204.

† *Archæologia*, Vol. III, p. 157.

‡ *Archæologia*, Vol. XXV, pp. 504-5.

One other instance, later in the century, may be given.

In the household book of Lord North * under the dates of 1577 and 1578 are entries of moneys paid for "Hopps," doubtless for brewing. These purchases are interesting as indicating large brewings of beer for household use. Lord North had a large hop garden on his own estate.

In the *Bulwarke of Defece* (Defence), written by William Bullein about the middle of the 16th century, the author states that hops were then being grown in Suffolk. Editions of his book were issued in London in 1562 and 1579.

The most important of early printed accounts of Kentish hops is "A Perfite platforme of a Hoppe Garden," of which three editions appeared towards the end of the 16th century, namely, in 1574, 1576, and 1578. The author was Reynolde (or Reginald) Scot, a writer who is better known for his *Discoverie of Witchcraft*. He was a member of the family of Scot, of Scott Hall, in the parish of Smeeth, near Ashford, and his book is of particular value for the present purpose, because his observations and advice were founded on his own experiences of hop cultivation in this part of Kent.

* *Archæologia*, Vol. XIX, pp. 296-7

A **P**erfite platforme
 of a Hoppe Garden,
 and necessarie Instructions for the
 making and mayntenaunce thereof,
 with notes and rules for reformation
 of all abuses, commonly practised
 therein, very necessarie and
 expedient for all men
 to have, which in any
 wise have to doe
 with Hops.

Now newly corrected and augmented
By Reynolde Scot.

Proverbs II.

Who so laboureth after goodnesse, findeth his desire,

Sapien 7.

Wisedome is nymbler than all nymble things.
 She goeth through and attayneth to all things.



¶ Imprinted at London by Henrie
Denham, dwelling in Pater noster
 Rowe, at the Signe of
 the Starre.

1578.

Cam privilegio ad imprimendum solum.

FIG. 20.—Copy of title-page of R. Scot's book, 1578.

The book is full of practical instruction on the selection of suitable soil and situation for a hop garden ; of preparation of the ground ; setting the plants, poling, tying, hillng, gathering, drying and packing hops. In many respects the information is as useful to-day as it was nearly three-and-a-half centuries ago when it was published.

As the book is now scarce and difficult to obtain for the purposes of consultation, the following extracts and epitome may be acceptable.

In speaking “of apt and unapt grounde for Hoppes,” he says :

“ If you shall feele a clod (being dissolved with water) to be very clammy, or cleaving like waxe to your fyngers in kneading it, the same to be profitable lande, &c. . . . a dry grounde, if it be riche, mooloe, and gentle, is the soyle that serveth best for this purpose, and such a moulde must either be sought out, or else by cost and labour be provoked. If it be a verye shallowe rocke (excepte you raise it with greeete or good earth) you shall not set your Poales deepe, steddie, and fast enoughe, to withstand the force of the wynd.”

With regard to situation, Scot does not advise a directly southern aspect. He adds that the garden “ Should also be placed neare to your house, except you be able to warrant the fruite thereof from such fyngers as put no difference betweene their owne and other mens goodes.”

The preparation of the ground consists in tilling it

“ In the begynning of Winter with the Plough, if it be great, or with the Spade, if it be small, and this doe, not only the

yeare before you plant it, but also everye year after, even so long as you meane to receyve the uttermost commoditie of your Garden, assuring your selfe that the more paynes you take, and the more cost you bestowe rightly hereupon, the more you doe double your profit, and the nearer you resemble the trade of the Flemming."

“THE TYME TO CUT AND SET HOPPE ROOTES.

“In the ende of Marche, or in the beginning of Aprill, repayre to some good Garden orderly kept, as wherein the Hoppes are all of a good kinde, all yearly cut, and wherein all the hylles are raysed very high (for 'there the rootes will be greatest), then compounde with the owner or keeper thereof for choyce rootes, which in some places will cost sixe pence an hundreth, but commonly they shall be given unto you, so as you cut them your selfe, and leave every hill orderly and fully dressed And now you must choose the biggest rootes you can finde (that is to say) such as are in bignesse three or four inches about. And let every roote which you shall provide to set, be nine or ten inches long. Let there be contayned in every such roote, three joyntes. Let all your rootes be but the springes of the yeare last past.”

Precise directions for distinguishing between good hops, unkindly hops, and wild hops, follow. Next are directions for “setting of Hoppe Rootes,” and as to the distance at which the hills should be made from each other.

It was clearly the custom, in Scot’s time, to make quite large and lofty hills, as may be seen in the accompanying facsimiles of some of the

wood cuts which adorned his book. These represent the operations of tying and training the hops to the poles, etc. (Figs. 21, 22, 23.)



FIG. 21.—*Tying Hops in 1574.*

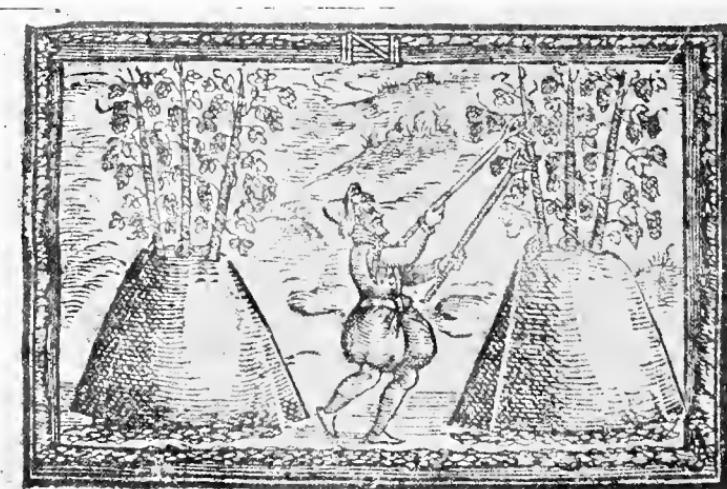


FIG. 22.—*Training Hops in 1574.*

In a garden one acre in extent Scot advises that the hills should be divided by a space of at least eight feet, but in gardens of smaller size the hops may be planted seven feet apart.



FIG. 23.—*Stripping Hops from the poles in 1574.*

The section entitled “Of Poales,” advises the use of alder poles, of from 15 to 16 feet long. These should be cut between Allhallowentide (31st October) and Christmas, and, after being shaped and sharpened, should be piled up immediately. Directions are given for the erection of poles, and mention is made, with wood-cut illustrations, of a “Crowe of Iron” and “a forked wooden toole, with a poynt of yron” with which the holes for the poles were pierced in the ground. Every pole was directed to be inserted a foot-and-a-half in the soil, and so placed as to lean a little outwards.

“ OF THE GATHERING OF HOPPES.

“ Note that commonlye at Saint Margaret’s daye (20th July), Hoppes blowe, and at Lammas (1st Augt.) they bell, but what time your Hops begin to channg colour (that is to saye) somewhat before Michaelmas (11th Oct.) (for then you shall perceyve the seede to channg colour, and waxe browne) you must gather them, and for the speedyer dispatch thereof procurre as much helpe as you can, taking the advantage of fayre weather, and note that you were better to gather them to rathe* than to late.

“ To do the same in the readyest and best order, you must pull downe foure hylles standing togither in the middest of your Garden, cut the rootes of all those hilles. . . . then pare the plot small, level it, throwe water on it, treade it, and sweene it, so shall it be a faire floore, whereon the Hoppes must lie to be picked.

“ Then beginning neare unto the same, cut the stalkes a sunder close by the toppes of the hilles, and if the Hoppes of one Poale be growne fast unto another, cutte them also a sunder wyth a sharpe hooke, and with a forked staffe take them from the Poales.

“ You may make the Forke and Hooke (which cutteth a sunder the Hoppes that grow togither) one apt instrument to serve both these turnes, as is hereafter shewed.

“ Then may you with the forked ende, thrust up, or shooe off, all such stalkes as remayne upon eche Hoppe poale, and carye them to the floore prepared for that purpose.

“ For the better dooing hereof, it is very necessarye that your Poales be streight without scrags or knobbes.

“ In any wise cut no more stalks than you shall cary away within one houre or twoo at the most, for if in the meane time the Sunne shyne hote, or it happen to rayne, the Hoppes (remayning cutte in that sorte) will be much impaired thereby.

* “ To rathe ”=too early.

" Let all such as helpe you, stande rounde about the floore, and . . . speedily strip them into Baskets* prepared ready therefore.

" It is not hurtfull greatly though the smaller leaves be myngled with the Hoppes, for in them is retayned great vertue, insomuch as in Flaunders they were sold Anno Domini 1566 for xxvjs. viijd. the hundredth, no one Hoppe beyng mingled with them."†

Instructions are next given as to the disposal of the poles when the hops are picked, winter work in the hop garden, manuring, cutting hop-roots, and the like.

An important section of this entertaining and instructive volume is devoted to the process of drying hops. The construction of the "Oste" with its "Roumes" and "Furnace or Keele" is set forth in detail, with wood cut illustrations of the elevation and ground-plan. (Fig. 24.) The house itself

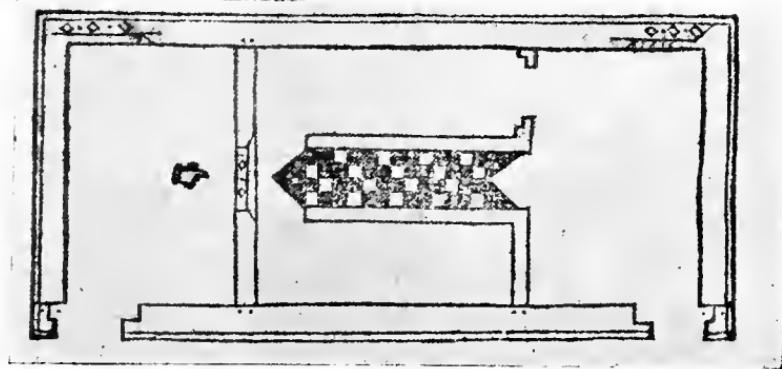


FIG. 24.—*Ground plan of oast-house in Kent, 1574.*

*From this it seems clear that bins were not yet employed in hop picking.

† Attention may be drawn to this interesting fact, serious objection being made by modern brewers to the presence of any leaf at all.

was to be a building 18 or 20 feet long and 8 feet wide, containing three rooms, the middle and principal of which was the oast proper 8 feet square. The forepart was for the reception of green hops, the hinder part for those which had been dried. The furnace itself was to be 13 inches wide, 6 or 7 feet long, and the height 30 inches. Several holes were made or left in the brickwork walls of the furnace, the upper part of which was to be "dawbed verye well with morter." It is directed that the bed, or drying-floor, must be placed almost 5 feet above the lower floor, and composed of wooden laths laid a quarter-of-an-inch apart. On this drying-floor the hops were to be carefully spread out in a layer about 18 inches deep. Drying was to be continued until the hops acquired a browned but bright appearance.

A section "Of the packing of Hoppes" deals with a method of packing not very unlike that in vogue in Kent before mechanical means were employed for pressing the hops into the pockets.

The book is written in charming language and in the vigorous style in use during the reign of Queen Elizabeth. Its directions to the hop grower are of considerable value to-day, and afford remarkable testimony to the high state of agricultural knowledge in general, and of the proper treatment of hops in particular in Kent in the latter part of the 16th century.

Another early writer who gives some interesting particulars about the cultivation of hops in England is Tusser. Thomas Tusser was born, probably in 1524, at Rivenhall, near Witham, in Essex, and he died in 1580. A recent biographer has well described him as a “good, honest, homely, useful old rhymer,” and adds that he has been called “the British Varro.” He wrote his *Hundreth good pointes of husbandrie* when engaged in farming at Cattiwade in Suffolk. The work was subsequently enlarged, in 1573, to *Five Hundreth Points*. The following transcript of his “Lesson of Hop-yards” is made from page 89 of the edition of his *Five Hundred Points*, published at London in 1663.

A LESSON OF HOP-YARDS.

Where hops will grow,
Here learn to know,
Hops many will come,
In a rood of room.
Hops hate the land
With gravel and sand.
The rotten mould
For hop is worth gold.
The sun south-west,
For hop-yard is best.
Hop-plot once found,
Now dig the ground.
Hops favoureth malt,
Hops thrift doth exalt.
Of hops more reed,
When time shall need.”

On page 92 of the same book are the following lines :

“A LESSON, WHERE AND WHEN TO PLANT A GOOD HOP-YARD.

“ Whom fancy perswadeth, among other cops,
To save for his spending sufficient of hops :
Must willingly follow, of choices to chuse
Such lessons approved, as skilful do use.

NAUGHT FOR HOPS.

“ Ground gravelly, sandy, and mixed with clay,
Is naughty for hops every manner of way,
Or if it be mingled with rubbish and stone,
For dryness and barrenness, let it alone.

GOOD FOR HOPS.

“ Choose soil for the hop of the rottenest mould,
Well dunged and wrought as a garden plot should :
Not far from the water (but not over-flown)
This lesson well noted is meet to be known.

“ The Sun in the Sonth, or else southly and West,
Is joy to the hop, as welcomed guest :
But Wind in the North, or else northly East,
To hope is as ill as a fray in a feast.

“ Meet plot for a hop-yard, once found as I told,
Make thereof account, as of jewel of gold :
Now dig it and leave it the Sun for to burn,
And afterward fence it to serve for that turn.

THE PRAISE OF HOPS.

“ The hop for his profit, I thus do exalt,
It strengthneth drink, and it favoureth malt,
And being well brewed, long kept it will last,
And drawing abide, if ye draw not too fast.”

Readers may like to see the original text, which is shown in the accompanying illustration. (FIG. 25.)

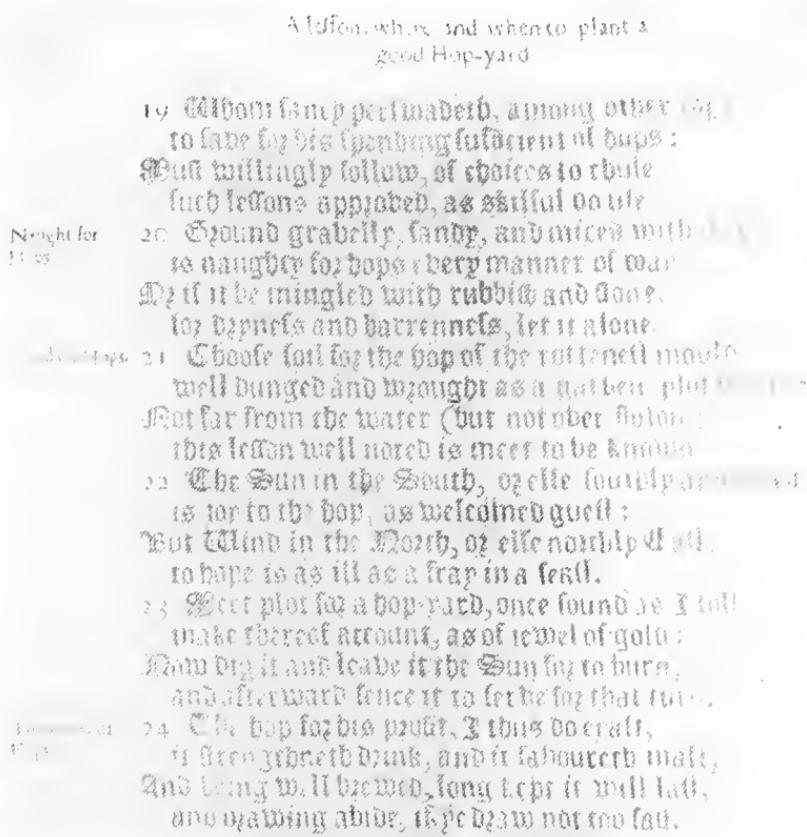


FIG. 25.—Facsimile of lines from *Tusser's poems*.

Gervase Markham, who published his *Inrichment of the Weald of Kent* in 1631, 1636, 1649, 1664, 1668 and 1675, has a few words to say about hops.

In one section of his book he discusses the means of destroying moles, and writes :—

“ To conclude for this matter of medicines, or for the helping of gardens, hop-yards, or any small spot of ground, there is not anything held more available, than to sow in that place the herb called *Palma Christi*; for it is found by certain experience, that wheresoever that herb groweth naturally of it self, or otherwise, is either purposly sown or planted, there in no wise will any Moal abide.”

The *Palma Christi* is the *Ricinus communis* of Linnæus, popularly known as the castor-oil plant.

Some of the chief points in the cultivation of hops in Kent have been mentioned in the poem, entitled, *The Hop Garden*, a Georgic in two books written by Christopher Smart, himself a Man of Kent, born at Shipborne, near Tonbridge, in 1722.

The following extracts will serve to show the style of the poem, and also the careful observations which the poet made on hop growing and drying during the early days of the industry in his native county :

“ This site for thy young nursery obtain'd
 Thou hast begun auspicious, if the soil,
 As sung before, be loamy; this the hop
 Loves above others; this is rich, is deep,
 Is viscous, and tenacious of the pole.
 Yet maugre all its native worth, it may
 Be meliorated with warmth compost.”

“ thy lands
 Which first have felt the soft’ning spade, and drank
 The strength’ning vapours from nutricious marl.
 This done, select the choicest hop, t’insert
 Fresh in the opening glebe. Say then, my muse,
 Its various kinds, and from the effete and wile,
 The eligible separate with care ;
 The noblest species is by Kentish wights
 The master-hop y’clept. Nature to him
 Has given a stouter stalk ; patient of cold,
 Or Phœbus ev’n in youth, his vernal blood
 In brisk saltation circulates and flows
 Indefinitely vigorous : the next
 Is arid, fetid, infecund, and gross,
 Significantly styled the Friar : the last
 Is call’d the Savage, who in ev’ry wood,
 And ev’ry hedge, unintroduced intrudes.

* * * * *

“ Soon from the dung-enriched earth, their heads
 The young plants will uplift, their virgin arms
 They’ll stretch, and marriageable claim the pole.
 Nor frustrate thou their wishes, so thou may’st
 Expect a hopeful issue, jolly mirth,
 Sister of taleful Momus, tuneful song,
 And fat good-nature with her honest face.
 But yet in the novitiate of their love,
 And tendernesss of youth, suffice small shoots
 Cut from the widow’d willow, nor provide
 Poles insurmountable as yet.

Now are our labours crown’d with their reward,
 Now bloom the florid hops, and in the stream
 Shine in their flowing silver, while above
 Th’ embow’ring branches culminate, and form
 A walk impervious to the sun ; the poles
 In comely order stand.”

The following lines portray a familiar scene in hop picking in olden times, and the operation of drying (*see FIG. 26*):

“The Cumulating Mob

Strive for the mastery—who first may fill
The bellying bin, and cleanest cull the hops ;
Nor ought retards, unless invited out
By Sol’s declining, and the evening’s calm,
Leander leads Letitia to the scene
Of shade and fragrance—then th’ exulting band
Of pickers, male and female, seize the fair
Reluctant, and with boist’rous force and brute,
By cries unmov’d, they bury her i’ th’ bin :
Nor does the youth escape—him too they seize,
And in such posture place as best may serve
To hide his charmer’s blushes ; then with shouts
They rend the echoing air, and then from both,—
So custom has ordain’d—a largess claim.

* * * * *

Thus much be sung of picking ;—next succeeds
The important care of curing :—quit the field,
And at the kiln th’ instructive muse attend.
On your hair-cloth, eight inches deep, no more,
Let the green hops lie lightly ; next expand
The smoothest surface with the toothy rake.
Thus far is just above ; but more it boots
That charcoal flame burn equally below ;
The charcoal flames, which from thy corded wood,
Or antiquated poles, with wond’rous skill,
The sable priests of Vulcan shall prepare.
Constant and moderate let the heat ascend ;
Which to effect, there are who with success
Place in the kiln the ventilating fan.
Hail, learned, useful man * whose head and heart
Conspire to make us happy ; deign t’accept
One honest verse ; and if thy industry
Has served the hop-land cause, the muse forebodes
This sole invention both in use and fame,
The mystic fan of Bacchus shall exceed.
When the fourth hour expires, with careful hand
The half-bak’d hops turn over. Soon as time
Has well exhausted twice two glasses more
They’ll leap and crackle with their bursting seeds
For use domestic, or for sale mature.

* Dr. Hales.



FIG. 26.—“Leander leads Letitia to the scene.”

In the year 1729 the book entitled *The Riches of a Hop Garden explain'd*, was published. A second edition, without date, was also issued. The author was Richard Bradley, F.R.S., Professor of Botany in the University of Cambridge, and he dedicates his work to the Duke of Beaufort. Both editions are rare, and much prized by collectors.

The information which the book contains has a certain value as indicating the early 18th century methods of hop cultivation and drying, yet it is obvious that the author lacked practical experience of the subject upon which he wrote.

The engraved frontispiece, however, is of the highest interest, because it gives a contemporary view of the Hop Market in the Borough of Southwark.

One may obtain information on several matters connected with the cultivation of hops in Kent, and particularly in the Maidstone district, at the latter end of the 18th century in William Marshall's *Rural Economy of the Southern Counties* (Kent, Surrey, and Sussex), 1798. The section relating to hops occupies pp. 170-303 of the first volume, and is treated at some length. Many of the facts given are of great value for the present purpose, although it is clear, from internal evidence, that the writer's experience of hop-growing, in Kent at any rate, was limited and superficial.

In speaking of manures, Marshall points out the great value of woollen rags for hop cultivation. These were brought from London in large netted bundles costing about £5 a ton, and spread over the hop garden every third year, at the rate of one ton per acre.

Many varieties of wood were used for hop-poles, comprising chestnut, ash, sallow, willow, birch, maple, oak, hornbeam, and beech.

By the year 1790, when Marshall evidently collected the facts for his book, bins were used for collecting the hops when picked; tallies were employed for recording the measure of hops gathered; oast-houses sometimes comprised as many as eight or ten kilns, or drying-floors; charcoal, coke, and charred pit-coal were the fuels employed in drying; and, even at that early date, sulphur was thrown on the fires with the object of bleaching and improving the appearance of the sample of hops.

Lance's book, *The Hop Farmer*, 1838, gives many details as to the natural history, cultivation and treatment and properties of the hop. He devotes separate chapters to—

Antiquity, history, and laws.

Geological observations.

Botanical and physiological observations.

Qualities of the hop.

Diseases.

Chemical and scientific observations, and

The practice of hop culture.

His views are valuable as indicating the state of hop cultivation in England, and the opinions and practice of hop farmers during the first half of the 19th century. It may be added that Reynolde Scot's book, "*A Perfite Platforme of a Hoppe Garden*," was unknown to Lance until after the pages of his book were in type, but at the end he gives, in the form of an appendix, pp. 161-166, a short account of this the earliest book on Kentish hops ever published.

An article containing much useful and practical information on the management of hops was published in 1848* by Mr. Samuel Rutley, who received a prize for his essay from the Royal Agricultural Society. Apart from its really practical facts and advice, the work is valuable as showing the ideas on hop cultivation which prevailed about the middle of the 19th century.

The author deals, as Reynolde Scot did many years before, with soils, situation, preparation of the ground, setting-out, planting, digging, dressing or cutting, poling, earthing, and manuring a hop garden; with diseases of the hop; with hop-picking and drying; and on a variety of other points, such as the best method of preserving hop-poles for future use, and the annual cost of cultivation.

* *Journal of the Royal Agricultural Society of England*, Vol. 9,
pp. 532-582.

In the matter of situation, Rutley advocates the selection of ground sloping towards the north, partly with a view of obtaining shelter from the prevailing south-west winds at the period when the crop is ripe and most likely to be damaged thereby, and partly because the hops are likely to receive more hours of sunshine than if they had an entirely southern aspect; partly, also, to save the hops from being scorched by the mid-day sun.

Ploughing, he considers, the very worst form of tilling a hop-garden. "I would advise," he writes, "every young hop-planter never to stick a plough in his hop-ground after it is planted ; it tears and injures the roots, closes the ground with the tread of the horses, laying it in a state that requires more labour to get fine than when dug, and making it more unkind all the summer." In the few cases in which horse cultivation can be employed, the writer is favourable to the use of the nidget, a small horse-scarifier.

In the selection of the varieties of hops for planting, he advises Goldings, Canterburys and Grapes, whilst Jones's and Colegate's varieties are advocated less warmly. Wildings, Golden Tips, Rufers and Flemish hops are not recommended.*

* It will be remembered, of course, that several other valuable varieties have been introduced since the above was written.

The diseases of hops comprise wire-worms, fleas and flies, the hop-frog-fly, and mould or mildew. For wire-worms the remedy suggested is to place in the ground a number of potatoes cut in halves. These should be buried each day in the earth close to the hills and examined from time to time. The wire-worms have a great liking for potatoes, which prove a powerful counter-attraction to the tender, young hop-plants.†

Little can be done to prevent the depredations of the flea, except to keep the surface of the ground free from clods of earth which are apt to harbour the fleas. The encouragement of lady-birds is recommended, these little beetles finding their natural food in hop-fleas. Hop-frog flies are entrapped by knocking them off the bine and catching them in a tray coated with gas-tar. The effect of a thunderstorm or shower on such pests as these is remarkable, and does more to clear the hops in a few hours than days of artificial treatment.

Mould, or mildew, is regarded as due to dampness and insufficient air and light. The remedy is obvious; the plants must be placed at greater distances apart, or pinched back so as to admit plenty of fresh air.

† Another counter-attraction advocated by some authorities is to scatter crushed rape-seed over the ground.

Rutley's information about hop-picking is precise and interesting. He writes :—

" Hops are either picked in large baskets or in bins, the latter being the most general, the bin-frames being sufficiently large to take a cloth for two persons, or a family of a woman and two or three children, to pick in ; a man to pull poles to every four or five of these bins, to what is called a bin's company, consisting of eight or ten full-grown pickers, or of such a number of children as may be equal thereto ; the pole-puller, or bin-man, as he is called, in addition to his labour of pulling poles, to hold up the bag or poke for the man who measures to put the green hops in, to carry them to the wagon or cart that takes them away to the oast, and to strip the bine off the poles after the hops are picked off from all he pulls, for the sooner the bine is taken off the poles the better, since when lying in lumps in wet weather they are more liable to be injured, as the bines hold the wet. The bin-man, with his pickers, is placed to a certain number of hills, which is called a set, remains with them there until it is all picked, and then they move all together to another set : 100 hills generally are put to a set, which afterwards forms a stack of poles.

" These arrangements, although perhaps of minor importance, tend to prevent confusion, and promote regularity among the pickers, particularly when there are a great many. Hops are picked by the bushel, and are measured in a basket holding about 10 gallons, imperial measure ; the basket should be lightly filled level with the rim ; the price given per bushel varies with the crop, from 3 to 4 bushels for a shilling up to 9 or 10 in good crops ; they should be picked free from leaves, with the exception of a few small ones, and not in bunches. Hops are much cleaner picked than they used to be forty years back ; at that time one penny per bushel was a common price for a good crop."

Samuel Rutley's description was written in 1848, and he comments on the great improvements made in drying hops and in the construction of oasts for the operation. He draws particular attention to the introduction of circular kilns, which, he says, were invented by the late Mr. John Read, of Regent Circus.

In the *Farmer's Calendar*, 1827, Arthur Young estimates the cost of a new hop garden will range from £80 to £90 per acre for the first year, whilst the annual expenses subsequently will amount to £30 to £40 per acre. The same writer points out that small hop-gardens do not thrive so well as large, and that it is desirable that hops should be grown near a populous neighbourhood in order that sufficient hands may be procurable during the hop-picking season.

He adds :

" There is one situation in which it may be prudent to plant. He who possesses a bog, especially a flat, deep bog in a sheltered spot, and yet not too confined, may very profitably convert it into a hop-ground. A solid, weighty peat-bog makes an excellent hop soil when laid into beds by transverse trenches. Such land is a natural dung-hill, and will demand such manures as may perhaps be easily procured. Here the chances are favourable. If such a spot be not chosen, the best preparation of the land for hops is two successive crops of turnips or cabbages both fed on the land by sheep, and off early enough for ploughing and planting the land in March. They may be planted in rows at eight feet asunder, and six feet from hill to hill, which will give

full space for all the requisite operations. Three, four, or five fresh cuttings are planted in each hill, or spot which is to form a hill. In this month (March) old plantations are dressed, the hills opened, the roots pruned, and mould or compost returned. The time of poling depends on the shooting of the plants."

Under the heading of April this author writes :

" The chief business of this month, in the hop-ground, is that of poling. . . . In poling there are several points which demand consideration, such as the quality of the soil, and the degree in which the last crop weakened the exuberance of the plants. If overpoled one year they are weakened, and must be underpoled the next. The time of picking, whether late or early, has also an influence. . . . The number of poles per hill varies from three to five. Their sort, size, length, and position when set, are all of consequence."

In May it is recommended to—

" Dig the new planted hop garden this month: earth up the plants, and see that no weeds are left to infest them. At this time you should also pole your old plantations, proportioning the poles to the age and growth of the hops. Within a short time after the bines are tied to the poles."

In June,

" If tying the bines to the poles was not finished last month, it should be done early in this; which is also a busy season for cultivating the intervals in the various methods practised in different hop districts. About Midsummer, hops at Farnham are pruned by cutting off the spare bines, these are used as hay to feed cows."

PRESENTED
WILLIAM HENRY LE MAY. CHARLES LE MAY.
ERBERT LE MAY. DWARD LE MAY.

HOP FACTOR:

W. D. & H. O. WEAVER
44-68 BROAD ST., NEW YORK,
HOP POWERS RENT & SELLER,
PAINTED ART.

acquisition of these successful creations because the value of Repairs is the main of the business. During the last year, the value of Repairs has increased, and as a token of the high esteem in which they are held by the general body of Repairsmen in England.

M⁴ B ROPER CHARTER M⁷ MANWARING, 1911

FIG. 27.—Illuminated address presented to Messrs. W. H. & H. Le May, 1882.

Messrs. W. H. & H. Le May are offering at the Ashford Cattle Show an open Challenge Cup (*see illustration*) for the encouragement of hop cultivation generally. The following inscription is engraved on the cup :

LE MAY'S OPEN CHALLENGE CUP.

Presented for Competition by Messrs. W. H. & H. Le May,
Hop Factors, 67, Borough High Street, London, S.E.1,
For the BEST QUALITY and BEST MANAGED growth of English
Hops.

To become the property of the Grower winning it three times.



FIG. 28.—*Photograph of the Le May Challenge Cup.*

SMALL GROWERS.

All the available evidence goes to show that hop gardens were formerly much smaller than they are to-day, and that the cultivation was on a much more modest scale; but the great importance of the small grower is now generally recognized.

The small growers provide the nursery of the hop-growing industry. They educate the actual workman thoroughly in all details of the business, particularly the important process of drying. It is chiefly from this source that the larger growers draw the supply of their practical men; consequently it would be in the interest of all to encourage the small man by allowing him to increase his acreage to such an extent as to enable him to work on an economical basis. This is considered to be at the least eight acres. A less acreage than this does not allow the employment of the requisite labour for general work, for washing, for picking, and for drying. Especially is it very difficult to secure pickers and a practical dryer when only a very small acreage is to be dealt with.

This has been proved by the fact of so many small growers having grubbed their entire growth, when by the recent order they were compelled to reduce the acreage below what is the economical limit; another argument in favour of encouraging the larger number of growers is the fact that a man having a mixed farm, by growing a certain

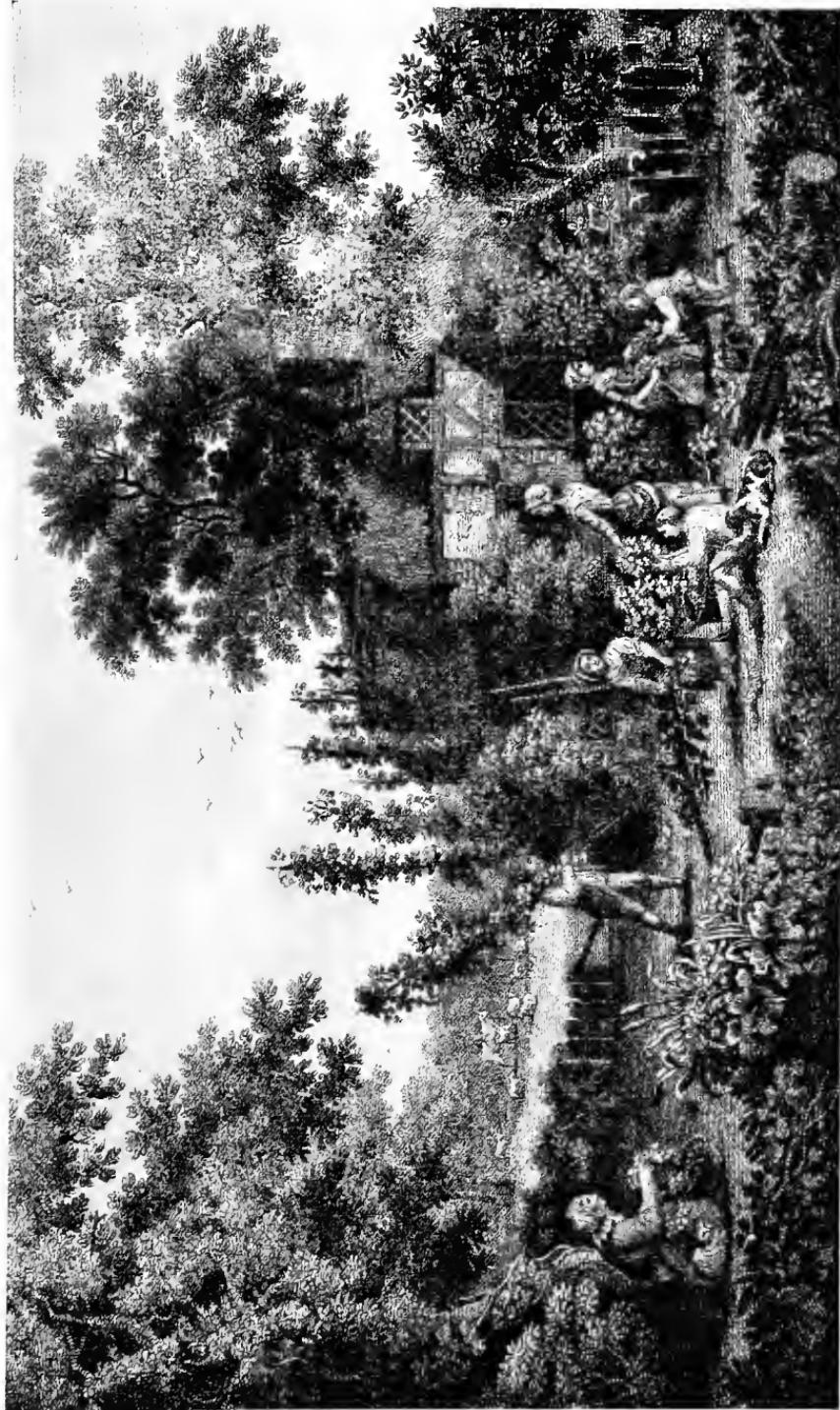


FIG. 29.—*The Small Grower: Hop-picking in 1779.*

acreage of hops, is enabled to employ more labour to the ultimate benefit of the whole farm, and increased production of food. It is also in the interest of the smaller brewers, as it is from the smaller growths of hops that he draws his supply.

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To amend Act for preventing Frauds in the Hop Trade. 1813-14 (32) (138).

For preventing Abuses in Packing Hops. 1817 (214) (349).

For the more convenient Payment of the Excise Duty on Hops. 1828 (439).

To regulate the Payment of Duties on Hops. 1831 (299).

To alter and amend 54 Geo. III, for preventing Frauds and Abuses in the Trade of Hops, and to make further Provisions relating to Hops. 1851 (39).

Sixteenth Report of Commissioners of Inquiry into the Excise Establishment and into the Management and Collection of the Revenue (Hops). 1835 (18).

Duties on Hops.

1801	(45)	1819	(116)	1822	(148)
1816	(47)	1819-20	(44)	1823	(52)
1818	(235)	1821	(33)		

Hops Imported and Exported. 1819 (293) 1823 (37).

Quantity Exported from Great Britain to Ireland and Foreign Countries, and Imported into Great Britain.

1824 (62) 1825 (110) 1826 (63)

Duty on Hops of the Growth of the year 1826. 1826-27 (31).

Number of Acres of Land in Great Britain under the Cultivation of Hops in 1826. 1826-27 (75).

Quantity of Hops Exported from and Imported into Great Britain in the year ended 5th January, 1827. 1826-27 (183).

Number of Acres of Land in Great Britain under Cultivation of Hops; Duty on Hops, distinguishing the Districts, and the Old from the New Duty; Quantity Exported from Great Britain to Foreign Countries, distinguishing the Countries to which the same have been Exported;

Quantities to each Country; Quantity of Foreign Hops Imported into the United Kingdom, distinguishing the Ports where Imported, and the Countries from whence Exported.

1821	(151)	(505)	1831-32	(88)	1842	(in 166)
1822	(282)		1833	(96)	1843	(in 135)
1823	(38)	(232)	1834	(213)	1844	(in 121)
1824	(129)		1835	(152)	1845	(in 137)
1825	(52)		1836	(257)	1846	(in 136)
1826	(34)		1837	(in 490)	1847	(in 154)
1828	(157)		1837-38	(in 321)	1847-8	(in 101)
1829	(110)		1839	(in 153)	1849	(in 111, 296)
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Parishes from which Agreements have been received, containing any Provision for distinguishing Ordinary and Extraordinary Charges in respect of Hop Grounds. 1840 (176).

Account showing how often in each year, from 1800, the Payment of the Hop Duties has been deferred. 1849 (288).

Duty on Hops of the Growth of the year 1849. 1850 (in 154).

Number of Acres of Land under Cultivation for Hops, and Duty charged in each collection in each year, 1837 to 1850; the Average Amount of Duty per Acre; and whether the Acres returned in the Sussex, Hereford, or Worcester Collections are according to Statute, or any local or customary Admeasurement. 1851 (101).

In each year from 1837 to 1851. 1852 (151).

Quantity of Foreign Hops entered for Home Consumption, and Quantity Exported in each of the years 1846 to 1850; the Quantity in Bond on 1st January in each of the years 1846 to 1851; also, Quantity of British Hops Exported in each of the same years, and to what places. 1851 (321).

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Number of Persons appointed as Hop Excisemen and Assistants, 1841; stating their Names, their usual Place of Abode and Occupation, District and County for which appointed, and Total Sums of Money paid to each. 1842 (275).

Contracts entered into by the Commissioners of Greenwich Hospital for Hops, 1830 to 1844; Names of Parties to each Contract, and the Price paid by the Commissioners. 1844 (236).

The Hop (Prevention of Frauds) Act; 1866.

Amend. in Com. 1866.

The Tithe Commutation Acts Amendment Act; 1873.

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Tithe Commutation Acts Amendment Bill, Report; with Proceedings, Evidence, and Appendix. 1873.

Return of Number of Acres under Hops, &c. Market Gardens, and Orchards, during each year 1867-80; and of Importation of Hops, &c., during each year from 1840. 1881.

Account showing deferment of payment of Hop Duties, to what periods, and on what securities; total weight of Hops charged with Duty, in each year, 1800 to 1852. 1852-53.

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